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THE IBIS,

A MAGAZINE OF GENERAL ORNITHOLOGY.

EDITED BY
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VOL. VI. 1864.

> "Ibimus indomiti venerantes Ibida sacram,
> Ibimus incolumes qua prior Ibis adest."

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PREFACE.

In concluding the sixth and last volume of the present Series of 'The Ibis,' the Editor has to acknowledge with unfeigned gratitude the kind support he has met with from the many Naturalists who have honoured him with contributions to its pages. The result has been that six volumes have been produced, which, as the Editor believes, contain an amount of information as regards nearly every branch of Ornithology such as has never been before brought together in one work, and at the same time form a tolerably complete record of the progress of this science during the last six years.

It is not without sincere regret that the Editor finds himself compelled, by the heavy pressure of other duties, to resign his office at the termination of the present volume. Such regret, however, is much lessened by the fact that his friend Mr. Alfred Newton has kindly acceded to the request of the British Ornithological Union to become the editor of a new Series of this Journal. Mr. Newton, as the readers of 'The Ibis' must be well aware, is a gentleman in every way qualified to perform this task, and in his behalf the present Editor requests all the contributors to, and readers of 'The Ibis' to continue to the new Series of this Journal the support they have hitherto conferred upon it.

P. L. S.

15 Lower Belgrave Street,
Sept. 1st, 1864.

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* Erroneously called *Falco sacer* on the plate. See note, p. 230.

THE IBIS.

No. XXI. JANUARY 1864.

I.—*Notes and Observations on the Birds of Egypt and Nubia.*

By Dr. A. Leith Adams.

The following notes on the birds of Egypt and Nubia were made during November and the two following months, whilst performing the usual voyage up the Nile from Cairo to the Second Cataract. They can, therefore, have no pretence to anything like completeness, as, independent of the short time expended on the excursion, I had not an opportunity of examining the Delta. Moreover, there is not much to add to the avifauna of a country so well known, excepting, perhaps, a few particulars connected with the range, varieties, and distribution of species which may have escaped the numerous competent naturalists who have visited Egypt and Nubia. There is, however, a point of no small interest connected with Egyptian ornithology, which must always be attractive to the student. I refer to the identification of the hieroglyphic characters with the present denizens of the country,—in fact, their "range in historical time," which dates back to some of the earliest world-known records. Thus we are enabled in a measure to compare the familiar denizens of the Nile Valley 4000 or 5000 years ago with the present inhabitants, and in some degree to show how little they have been affected, either numerically or physically, by what appears to ordinary observers a vast period. As specimens of artistic skill, many of the early delineations are perfectly wonderful.

Allowing for the excellent material at hand, and the preserving influence of climate, the figures on the granite obelisk of Karnak, done in the time of Tuthmosis I., display, especially with reference to the birds, a clearness of expression, a boldness and a truthfulness of outline, in every way surprising. Standing among the broken fragments of its sister obelisk, and looking upon the polished sides of this noble work of art, one can scarcely realize the idea that, since its construction, better than thirty-four centuries have passed away.

Although many species of birds have been found embalmed in tombs and pits, it is not clear that all were sacred. Perhaps whatever animal appeared on the hieroglyphic writings, and was not used as an article of food, may have been occasionally buried in that way; however that may have been, it is certain that the White Ibis, and probably two or more species of Hawks, including the Kestrel, were sacred, and kept at the public expense. This is not only evident from history, but also from the great numbers of their mummies, which would scarcely have been so plentiful had merely the bodies of stray individuals been collected, and more especially as the punishment of death awaited whoever killed an Ibis or a Hawk, either by design or accident.

Owls, Sparrows, Bare-headed and Egyptian Vultures, &c. have been found embalmed, but only occasionally, and rarely more than one or two at a time. Diodorus, Cicero, and others say that the Ibis and Hawk were worshipped because these birds destroy "scorpions, horned snakes, and noxious creatures which endanger life." Were the ancient Egyptians aware at the same time that the Kestrel preyed most extensively on all species of their beloved *Scarabæi,* including the most sacred emblem of the sun and of the world? The supposition that all Vultures were females led to their adopting this bird as the representative of maternity and protection; accordingly the Bald-headed Vultures, with outspread wings, on the ceilings of the temples secured protection to the worshippers.

Egypt and Nubia, viewed from an ornithological stand-point, present very different physical as well as geological features. The great expanse of cultivation in the low country, and various outlets of the Nile at the Delta, with their shallows, marshes, and sand-banks, offer excellent retreats for water-birds, which decrease in proportion southwards. The great wave of winter visitors impinges as it were on the Delta, and moves on gradually, decreasing where local circumstances are inimical, and continuing only where the advantages are great. Thus, after passing the first great barrier at Asowan and proceeding southwards, we suddenly notice the absence of all the Geese, Ducks, and Waders which crowd the shallows below the First Cataract. A few Falcons scour the narrow strips of cultivation. The Chats and Sand-larks we had to search for, in Lower Egypt, far inland, are now seen hopping among the sandstone-cliffs and wastes along the river's bank, whilst the Hooded Crow and other familiar tenants of the north country have all but disappeared; nor do we penetrate far south before the *Timaliinæ* and *Pycnonotinæ* show we are on the confines of a new ornithological province, the outposts of which are at the Second Cataract. But even that far south there seems little or no diminution in the numbers of certain well-known European species; for in the beginning of January the Pied Wagtail was seen sporting in hundreds along the banks at Wadai Halfeh, and the Chiff-chaff and Lesser Whitethroat were even more plentiful than in the districts we had just left. How much further south do these birds penetrate before the time comes for their retrograde movements?

The sycamore, acacia, palm, and tamarisk are the chief and almost sole trees of the country. The first grows most plentifully in Lower Egypt, but seems to decrease in numbers southwards; its umbrageous spreading boughs offer tempting retreats for insectivorous birds, and its topmost branches a safe position for the nests of the Black Kite and Hooded Crow. The acacia of the Nile, with its deep-green leaves, throws a grateful shade around the native dwellings, but is not so generally or extensively distributed as the common "camel-thorn," which is spread over Egypt, and extends into Nubia, lining the river's bank for many a long mile, either in thickset bush, overgrown with creepers and spider-webs, or single gnarled old trees, among the branches of which the Chameleon may often be seen. The palm is by no means a fitting resort for birds; and wherever solitary groves of date-trees exist, you may wander among their tall trunks for hours and, except near the villages, not meet with a bird of any description. It is evidently the want of forest, bush, and thicket in Egypt that accounts for the scarcity of true Shrikes, the paucity of *Sylviidæ*, and the total absence of Woodpeckers. The cliffs of nummulitic limestone and siliceous sandstone at various points on the river, both in Egypt and Nubia, afford excellent retreats for Raptores, Rock-Pigeons, Herons, Cormorants, &c. Here, among the ancient rock-cut tombs of man, or the still immeasurably older excavations of primeval Nile, they rear their young undisturbed. Yet the scenery of both these countries is often very tame. Their botanical productions are neither varied nor interesting, and there is no great diversity of birds, which, however, make up for this by their exceeding numbers. Along the banks of the river the Spur-winged Lapwing, Common Sandpiper, Black-headed Plover, Pied Kingfisher, and Wagtail are plentiful. Spanish Sparrows in thousands, and semi-domesticated Blue Pigeons, scour the country. The pretty Bluebreast, Robin-like, is seen hopping around the margins of fields. Crested Larks, in myriads, chirp, flutter, and rise before you. The Kestrel and Black Kite are hovering about, whilst the mud-built villages and their never-failing date-trees resound with the incessant chirp of the House-Sparrow and the soft cooing of the Senegal Dove. Proceeding desert-ways, we bend our steps across rich fields teeming with splendid crops of dhurra, until gradually the alluvium becomes less heavy, and at last suddenly terminates at a well-marked and abrupt line of demarcation, which records the limits of the year's inundation. Then we come on the Russet Wheatear, Pied Chats, and the Trumpeter Bullfinch, on the verge of the desert, which in long-drawn sandy wastes stretches far and wide. On the Arabian side, however, cliffs of tertiary limestone run along the bank, and in broken ridges extend north and south, advancing and retiring from you according to the devious windings of the river. Such is a transverse ornithological section of the Nile Valley a short way above Cairo.

In Nubia we have a very different appearance. The river's bed has now become narrowed by the porphyritic rocks of the First Cataract, and by the secondary sandstone, which forms steep banks, where the river's deposit is prevented from accumulating, except at bends and openings out in its course. There are banks of alluvium, covered with dates and patches of cultivation. How long the Nile has maintained its present level we cannot conjecture; like its avifauna, there has been no apparent change within the historical period *. On the verge of the cultivated parts are seen the mud-hovels of the natives, and still higher is a plateau covered with stones and drifted sand; but if you dig a few inches a reddish soil will be found, among which are strewn abundance of Unionidæ, Cycladidæ, and Paludinidæ, identical with species now living in the river; many of the first (*Ætheria*) are found attached to the old rocky bottom. In vain we surmise when "Father Nile" covered that flat †, on which nought is now seen exepting an occasional White-capped and Black Chat or a solitary Stone Plover. Still further on the fine yellowish-white sand of the desert is seen, in drifts and wreaths, on the flanks of isolated conical hills, which break in some degree the eternal sameness of the country. In that wide, wild wilderness the Hyena, Fox, and Ichneumon prowl, and the Gazelle has its midday retreat, until dusk, when all move towards the river's bank, to feed after their various ways. Such is Nubia near the Second Cataract; further southwards, of course, the interest in the fauna, flora, and geological aspect increases; but, as already stated, the Second Cataract formed the *ultima Thule* of my wanderings. The late valuable contributions to the ornithology of the Upper Nile, by Dr. Heuglin, show what diligent labour will accomplish; he has, besides, given us much information concerning certain Egyptian birds which frequent that country during summer. The defect in our knowledge of the avifauna of Egypt is, I believe, that we are in possession of lists of birds procured during the cold months, but that there is no connected account to show the time of arrival and departure of individual species, and the influence of local circumstances as to food, climate, or the inundation, in hastening their migrations,—information which can only be obtained by persons resident in the country throughout the year. Of the vast numbers of migratory birds which cross the Mediterranean twice annually, a small portion come in the way, and make a temporary resting-place of Malta, affording us the means of comparing them with those of North Africa. With reference to the birds found abundant in Egypt during my excursion, the following arrive in Malta in great numbers in March, April, and May:—the Kestrel, Pale-chested Harrier, Black Swift (this arrives in the latter part of April, and remains all the summer), House-Swallow (evidently however not from Egypt, as will be seen in the sequel), Hoopoe, Willow Wren, Chiff-chaff, Greater and Lesser White-throat, Stonechat, Wheatear, Red-throated Pipit, Yellow Wagtail, Pied and Boarula Wagtails, Linnet, and Quail. They come in either singly or in flocks; sometimes the little wanderers, unconscious of obstructions in their way, strike against the walls of the fortress and lighthouses at night. Again, during gales, the smaller birds may be seen drifting before them, and Quails in numbers coming in, flying within a few feet of the sea, whilst the large birds, such as Hawks, &c., are usually observed at high altitudes.

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* Much interesting information on this head was collected by my late lamented friend and companion, Mr. Rhind, whose labours in Egypt and elsewhere are familiar to every student of archæology.

† I found freshwater shells at various levels in Nubia. At Der, shells were met with at an elevation of 110 feet above the highest Nile of the present day. (See Quart. Journ. Geol. Soc. of London, 1863.)

The birds contained in the following list were either shot by myself or verified from collections of fellow-travellers, long experience having taught me that the pernicious custom of identifying birds on wing, or from casual examination, cannot be too strongly reprobated; there are, of course, exceptions to be made where circumstances warrant. The above habit unfortunately grows on individuals, and more so with the roving traveller who takes to the study of natural history as an occupation, or with him who observes in the midst of his more important duties. Every naturalist, old and young, should remember the words of the Mantuan bard—

> "O formose puer! nimium ne crede colori."

Such species, in my collection, concerning the names of which I have any doubts, I take the liberty of forwarding to Dr. Sclater, to whom I am greatly indebted for valuable aid on former occasions*.

NEOPHRON PERCNOPTERUS

Breeds among the lofty crags along the banks of the Nile, in Nubia. The iris is brown in young birds and until the second year, when it becomes reddish, more so in the old †. The adult plumage is not attained until the third and fourth year, as I observed in a tame specimen in my possession. Being the *Rakham* of the Arabians and Hebrews, this is the *Gier Eagle* of Leviticus xi. 18. The Egyptian Vulture is frequently represented on the sculptures; but there is no proof that it was worshipped. The "bird and globe," representing a king or Pharaoh (according to Horapollo, "an Eagle"), is not feathered to the toes, and its slender bill and general outline bear a greater resemblance to the *N. percnopterus.*

GYPS FULVUS.

Is plentifully distributed over Egypt and Nubia, assembling in great numbers on carcases, and at very short notice; seldom, however, a day passes that several may not be seen soaring at vast heights. In common with its congeners, this species is timid and easily driven from its repast. I witnessed a Hooded Crow disperse three Griffon Vultures which were feeding on a stranded carcase in the river.

VULTUR CINEREUS, Gm.

The dark plumage of this Vulture serves to distinguish it from the last, even at great altitudes. The Griffon, Cinereous, and Egyptian Vultures may be frequently observed sharing together the same repast. The Cinereous, although not so common as the Griffon, is generally distributed over Egypt and Nubia. I can find no authentic information of either the *V. auricularis* or *Gyps vulgaris*, of Savigny, having been met with in these countries of late years. Besides the signification of "mother," the Vulture was sacred to the Egyptian Minerva and Lucina, appearing as their head-dress and that also of the queens of the country. The colouring of all I have seen on temples is in a degree whimsical, but in outline they show great artistic skill. Several delineations of Vultures on the walls of a recently excavated temple at Thebes are remarkably well done. Perhaps Ælian (lib. ii. 46) refers to the Cinereous Vulture when he mentions that the Black Vulture of Egypt was originally the produce of an Eagle and a Vulture. Mummies of bare-headed Vultures have been found at Thebes.

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* I have attached my initials to my remarks on these specimens, and to the names when I have altered them.—P. L. S.

† I here take the liberty of correcting an error in my paper on the "Birds of India," Proc. Zool. Soc. 1858, wherein I have stated the *iris* to be yellow.

GYPAËTOS BARBATUS.

On the 14th November, 1862, whilst crowning the summit of the Great Pyramid, I came most unexpectedly on a Bearded Vulture which had been resting on the platform at the apex. Not having seen another during my subsequent travels in Egypt and Nubia, I would have hesitated now in recording its appearance in Lower Egypt so far north as the Pyramids of Gizeh; but being perfectly familiar with the bird, from previous observation on the Himalayan Mountains, I had not the slightest difficulty in recognizing my old acquaintance. I have no doubt the individual in question was a straggler, attracted by the isolated conical aspect of these great landmarks; for, after a few circular sweeps around their sides, he steered his course eastward towards the Mogattam Hills. The ferruginous dust found among the feathers of the front of the neck, crop, and lower parts was, in all I shot on the Himalayas, confined to adults, and to individuals assuming the rufous white on the belly.

AQUILA NÆVIA

Is the most common Eagle in Egypt, and may often be seen either in fields hunting after reptiles and small quadrupeds, or feeding on fish on the sand-banks. I found portions of a large snake in one killed near Thebes, and on another occasion surprised a pair intently devouring a large Lepidotus (*Characinus dentex*, Sav.). I take the bird of Egypt to be the true *nævia*. A male specimen had large elliptical spots on the upper parts of the body, a rufous tinge on the vent, and measured 25½ inches in the flesh.

Aquila pennata I saw on several occasions, but did not procure specimens. Although both Diodorus and Strabo say the Eagle was worshipped at Thebes, "there appears good reason to think they were mistaken, and that the Hawk was the bird they ought to have substituted"*. An Eagle frequently occurs in hieroglyphics, where it has the force of the letter A †.

PANDION HALIAËTUS

Is a characteristic denizen of the sand-banks and shallows of the Nile, especially in Lower Egypt. I did not observe it in Nubia.

BUTEO RUFINUS, Rüpp.

This is the most common Buzzard in Egypt during the cold months; it affects the open country, and hunts along the canal-banks after Rodents, lizards, snakes, and frogs. According to Heuglin ‡, the Common Buzzard is seen occasionally during the winter in Egypt. Rüppell speaks of it as being found "everywhere in N.E. Africa." I did not notice one individual during my excursion. In fields on the left bank of the river, opposite Beni Hassan, I followed a large Buzzard one morning, but unfortunately could not get within shot. Its upper parts were bluish ash, lighter about the head; breast and belly white, with cross barrings of black; legs yellow. I presume the above may have been the *Circaëtus beaudouini* of Verreaux.

MILVUS ATER (Gm.).

This is the most common Kite in Egypt, and, like the *M. govinda* of India, frequents towns as well as the open country, breeding in trees and rocky situations. I have taken its nest and young in January. The iris is dark brown in the adult, but in several young and immature birds it was found to vary from a light yellow to greyish brown. The similarity in these respects also in plumage of certain varieties of the Govinda Kite and the above is very striking. The ♂ and ♀ of both measure likewise 21 inches in length in the flesh.

MILVUS ÆGYPTIUS (Gm.)

Is much less common than the last, and apparently more southern in its range. I did not observe the Egyptian Kite until near the First Cataract, where, along with the Black Kite, it was seen at Edfoo, hunting around the village dove-cots, and chasing the young Pigeons, which it torments until they drop exhausted, when the Kite bears them off in its talons. I have noticed the Govinda Kite do the same in India. The natives catch the Kites by means of traps baited with Pigeons, and placed on the tops of palm-trees. The bright white bill and heavier appearance will serve to distinguish this from *M. ater*, although immature individuals of these two species are very much alike in plumage and colour of bill, and iris. The adult *M. ægyptius* has the iris a shade lighter than *M. ater*, and is about an inch longer; moreover it is not so familiar in its habits, and is more often observed in rocky, out-of-the-way places.

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* Wilkinson's 'Ancient Egyptians,' vol. ii. p. 294.

† Ibidem.

‡ Ibis, 1861, p. 76.

ELANUS MELANOPTERUS (Daud.)

Is more abundant in the Delta than above Cairo, and seems to decrease in frequency towards Nubia. The ornithologist will be struck by the numbers of this pretty little Hawk observable in the cold months along the railway route between Alexandria and Cairo.

FALCO PEREGRINUS.

FALCO LANARIUS, L.

FALCO BIARMICUS, Brehm.

The Peregrine is not uncommon along the river route. In dissecting a specimen shot near Thebes, I found coils of a long thread-worm in the intestines and cavity of the abdomen; the same was noticed in another individual procured on the banks of the Indus*. In both cases the birds were plump and in good condition. The Egyptian specimen was a ♀, and measured 18 inches in the flesh. I examined a specimen of the Lanner which was shot in Upper Egypt. *F. biarmicus* is not uncommon in the rocky parts of Nubia: I procured one specimen and noticed many more. I recommend Nubia as a very suitable locality for studying the affinities of the two last-named Falcons and their immediate congeners. There are several large moustached Falcons among the hieroglyphic writings, and also on the walls of the temples and tombs; but all are so extravagantly coloured that there is no possibility of making out the species*.

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* See Proc. Zool. Soc. 1858, p. 472.

CERCHNEIS TINNUNCULUS, Boie.

The Kestrel is the most common Falcon in Egypt. I did not observe its congener, *C. cenchris*; but Heuglin says, "it is very common in Lower Egypt during spring, especially around Alexandria"†, possibly on its way northwards, as it may be met with in numbers at that season in Malta. The Kestrel was the emblem of Horus, Re, or the sun, and a host of other gods. This is apparent from the mummied specimens, intaglios on the monuments, and the usual wooden representations on the lids of coffins. There is little doubt, however, that other closely allied species, such as *T. cenchris*, may have frequently been mistaken for, or perhaps considered identical with, the sacred bird, and accordingly worshipped and embalmed. The bird of Horus is represented with a black spot under the eye, red and black barrings on the back, with reddish white on the lower parts, which are more or less spotted with black. Mummied Kestrels are found in great numbers, and, with the Ibis, have frequently been discovered in coffins along with human mummies. Its part in the symbolism of Egyptian worship is thus described by Mr. Rhind:—" The Hawk was the symbolic bird of that important functionary of Amenti, Horus, who, after having first taken part along with Anubis in weighing the good and bad actions of the trembling souls, ushered those whose welcome was secured into the presence of Osiris."‡ On that account the Hawk was held in great veneration, as we learn from Herodotus and Diodorus that, " in Egypt, whoever kills an Ibis, Hawk, or Cat, either wilfully or by accident, must necessarily be put to death,"—a bad look-out for ornithologists in these days! Moreover, Diodorus states that every trouble was taken to preserve them, and that they were fed by the natives, who not only kept Hawks in captivity, but were in the habit of placing flesh and food in the way of wild individuals. The claws of many mummied Kestrels examined by me were all sharp, and unlike those of tamed Hawks long habituated to close confinement. At the present day the Kestrel is one of the most familiar birds of Egypt; indeed, more so than perhaps is observed in any other country. I have often been enabled to approach the Kestrel within a few yards, whereas the Sparrow-Hawk and the other small Raptores seem in no wise different in habits from those of the same species I have noticed elsewhere. Whenever a Hawk died, its body was handed over to the embalmers, and subsequently deposited in a sacred tomb. It mattered not where or how it had died, in common with other sacred animals, it was wrapped in linen cloth, and followed to the grave by a procession of mourners, whose outward signs of grief were shown by beating their breasts, and by such voluntary penances as testified to the veneration with which these animals were held. Even the Hawks which died in foreign countries were embalmed and brought to Egypt. There is every reason to suppose ancient authors were correct in stating that the animals held sacred were those man found most useful towards his well-being. The Hawk was partially revered at Philæ, and worshipped at Heliopolis, where, as in other Egyptian cities, it was considered the type of the Sun and representative of the deity of the place. It appears, however, that the Hawk Strabo saw at Philæ was different from any he had seen in Lower Egypt or Greece; he says "it was larger, and very different in the marks of its plumage, and that it was a native of Ethiopia"*.

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* Wilkinson's 'Ancient Egyptians,' vol. ii. p. 207.

† Ibis, 1861, p. 72.

‡ 'Thebes, its Tombs and their Tenants,' p. 100.

ACCIPITER NISUS

Seems more common in Nubia than in Egypt, where it may be often observed, scouring along the narrow strips of cultivation on the river's bank in quest of the Chiff-chaff, Pied Wagtail, and Red-throated Pipit. It has no favour for the Kestrel, and seldom loses an opportunity of annoying the little creature. Coupled with the impertinent attacks of Kites and Hooded Crows, the Kestrel appears to enjoy little peace or comfort. Several male Sparrow-Hawks measured in the flesh 12½ inches, the cheeks, breast, and flanks sparingly marked with rufous; the females 15 inches, with very clear plumage and regular cross-barrings on the lower parts, without any rufous on the plumage.

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* Lib. xvi. 49.

CIRCUS ÆRUGINOSUS.

Individuals in various stages of plumage, including those figured by Yarrell and Bewick, were observed both in Egypt and Nubia. I noticed one feeding on a decomposed fish on a sand-bank near Thebes.

CIRCUS PALLIDUS *.

This is the Common Harrier, and may frequently be observed hunting the wheat-fields. I have not seen *C. cyaneus*, which, however, appears to have been *killed* in Egypt †. Several adult and young males in the garb of the female measured in the flesh, as near as possible, 16½ inches. I am inclined to think that *C. pallidus* is very much more common than *C. cyaneus* in the South of Europe and North Africa.

ATHENE MERIDIONALIS, Risso.

My specimens are certainly paler than *A. noctua* (Retz.). Several males and females measured 6 inches in length. It is a regular tenant of the palm, tamarisk, and acacia groves, and apparently hunts along the canal-banks in Lower Egypt during the daytime. This is undoubtedly Minerva's bird, but authorities question if it was held in the same veneration in Egypt as in Rome. I once saw the Horned Owl on wing (*Bubo ascalaphus*, Sav. (?)), and found a dead individual of *Strix flammea* in Nubia. A Horned Owl, and perhaps the last species, very frequently occur both in the hieroglyphic writings and on the walls of the tombs, &c.; none, however, appear to have been sacred. Mummied Owls have been found at Thebes ‡.

CAPRIMULGUS ISABELLINUS, Temm.

I accidentally came on a pair asleep, at midday, among sand-dunes on the banks of the river in Nubia. This species passes the day on the sand of the desert, where it makes a temporary hollow like a nest.

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* I presume Dr. Adams means *Circus pallidus*, Sykes, which is generally (and better) known as *C. swainsoni*, Smith. *Circus cineraceus* (Montague's Harrier) has also been called *pallidus* by Hodgson.—ED.

† Taylor, Ibis, 1859, p. 46.

‡ Wilkinson, *op. cit.*

CYPSELUS APUS.

The climate of Lower Egypt is apparently too cold for this bird in winter, as I did not observe it until we reached the Thebaid, where and southward it is very plentiful. *C. melba* was not seen.

COTYLE RUPESTRIS.

Is generally distributed over Egypt and Nubia in winter; at that season it takes the place of *C. riparia*, which, however, seems to breed in Egypt in February *. I did not notice a single specimen of the latter during my excursion. Flocks of the Crag Swallow may be often seen skimming noiselessly along the surface of the river and stagnant pools, also around the acacia-trees in Nubia, where insects abound; its easy and comparatively feeble mode of flight is noticeable, compared with that of the Sand-Martin. The irides of many procured in Egypt were light brown, not *yellow*. Some males are much darker in plumage than others; this I noted particularly in one individual shot in Upper Egypt.

HIRUNDO RUSTICA.

I think I have seen one or two on wing with pale reddish-white lower parts, but the *H. rustica orientalis* of Schlegel is the Egyptian Swallow. It is plentifully distributed over town and country in Lower Egypt, getting less common southwards. At Thebes it is rare, at least during the cold months; and I did not observe a single individual after leaving that district and proceeding towards the Second Cataract. The Swallows which touch at Malta in spring, on their way northwards, are, as a rule, similar to the northern visitors: some have rufous-white bellies, but none are so deep rufous as the Egyptian specimens, in which the spots on the tail are of the same colour. The measurements of specimens killed in Malta and Egypt were equal. According to Wilkinson, the Swallow has been found mummied at Thebes. There is a bird in the hieroglyphics, intended to signify

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* Tristram, Ibis, 1859, p. 27.

"prolific," which Horapollo calls a House-Sparrow; if it be the same as Sharpe* mentions in his note to the above, there can be little doubt of its similarity to the Swallow, as may be seen in the illustrations in this author's work, and still better on the granite obelisk at Karnak.

MEROPS VIRIDIS.

There seems to be no variety among the Egyptian specimens I have examined—a noticeable circumstance when the *rufous-necked* and *verditer-throated* varieties of India and the Lower Himalaya are considered. The cold of Lower Egypt in December and January seems trying to this species, which is the only Bee-eater that braves the climate then. *M. persicus* arrives in April. I have seen the above and the Chiff-chaff almost benumbed by a temperature of 40° Fahr. in the shade. It is, however, a lively little creature on sunny days, and may be seen sporting about with great vigour, now shooting from the extremity of an acacia-branch, anon flitting from furrow to furrow in a newly-ploughed field; now four or six are clustered together on a branch, then suddenly, with loud shrieks and chatterings, they break off in divers directions. It is withal a stupid bird, and allows one to approach within a few feet: not even the report of a gun seems to frighten it.

ALCEDO ISPIDA.

CERYLE RUDIS.

The Common Kingfisher was observed often on the way between Alexandria and Cairo; it, however, became less common southwards, and eventually disappeared soon after leaving the latter city. The Belted Kingfisher is common wherever there are shallows and sand-banks, but is rarely seen between the First and Second Cataracts, as the shallows there are few and far between. It breeds early in December. All the male specimens (six in number) procured by me had a double collar, whereas in the female specimens (two in number) there was only one black collar.

UPUPA EPOPS

Is extensively distributed over Egypt and Nubia during the winter months, migrating to Europe in spring. Ælian* says the Egyptians respected the Hoopoe for its love of its young (?). In the "bird-writing" it signifies a "brick," perhaps from its disposition to perch on the crude brick walls of the native huts. On the wall of one of the famous tombs at Beni Hassan a bird-catcher is seen hauling his clap-net, which is filled with Geese and Ducks, whilst on a tree by his side, among other birds of the country, is the Belted Kingfisher, Hoopoe, and Pied Wagtail. The latter, excepting a little exaggeration in colouring, has been drawn with great accuracy. The Hoopoe is exceedingly well done, and, in common with many of the other delineations, retains the brightness of its colouring, although at least 3800 years have gone by. It is interesting to observe that the familiar tenants of the Nile Valley in those days were the same as now; possibly they may at present be more plentiful, as Egypt was evidently then more densely populated by the human race.

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* 'Egyptian Hieroglyphics,' p. 33, plate xxvii. nos. 1600 to 1606.

Phylloscopus trochilus.

Several specimens were procured in Nubia in January. I think it may turn out to be common in Egypt likewise, as I have reason to think I overlooked it in consequence of its similarity to the next species.

Phylloscopus rufus.

Measurements of many procured in Nubia and Egypt, from the beginning of November to the end of January, showed the length of males to average in the flesh $4\frac{12}{16}$ in., females $4\frac{5}{16}$. This is evidently only a winter visitor, arriving from Europe in vast numbers towards the latter end of September. I have heard its characteristic call as late as the beginning of November at Cairo. The numbers of this bird in the dhurra-fields, gardens, &c., up to the end of February are surprising. Its note is changed in winter to a "*hoit*," like that of the Willow Wren, but not so strong and loud. *P. bonellii* I have procured in Malta in spring during its migration northwards, but failed to meet with it in the Nile Valley.

Sylvia melanocephala.

The Sardinian Warbler is very common in Nubia, frequenting the impenetrable bushes of camel-thorn, where it secretes itself on the slightest appearance of danger. The white of the lower parts in all I examined in Nubia was not so clear as in many procured in Malta during its migration northwards in spring.

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* Nat. An. x. 16.

SYLVIA CURRUCA.

Among the acacia and thorny bushes which line the Nubian desert; it is a lively sight, during a clear sunny day, to witness numerous Lesser Whitethroats, Chiff-chaffs, and Sardinian Warblers flitting among the countless cobwebs which stretch in tangled meshes from every twig. As the Chiff-chaff flutters like a Humming-bird around the fragrant yellow flowers of the acacia, emitting its lovely "*hoit*," the Whitethroat moves along stealthily among the twigs, now and then seeking the denser parts to chant its sweet melodious song, while the Sardinian Warbler sits picking the cobwebs to pieces in search of their owners. I procured one specimen of *Sylvia cinerea* in the Thebaid; it is not nearly so common as the Lesser Whitethroat.

SUYA GRACILIS.

This is in all probability the *Sylvia textrix* of Savigny *, but whether to consider it the same as *Prinia gracilis* of Rüppell I am not in a position to determine †. It is an active little creature, and has the restless manner and noisome call of its congeners, the *Priniæ* and *Maluri*. The iris is brick-red; the call a loud "*creek*," like that of the Common Wren. It readily secretes itself in thick bush, where its presence is usually discovered by the rough notes invariably uttered when its haunts are approached. This species is common both in Egypt and Nubia.

CYANECULA SUECICA.

It would seem that all the southern and oriental specimens of this bird have the breast-spot *red*. Sometimes in Indian and Egyptian individuals I have noticed a dash of white around the borders or tipping the feathers of the breast-spot; this, however, is by no means regular, and seems the result of age.

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* 'Egyptian Expedition,' pl. 5. fig. 4.

† I believe this is *Prinia gracilis* of Rüppell's 'Atlas,' t. 2. fig. *b*. It is, however, as Mr. Swinhoe informs me, a true *Suya*, congeneric with *S. lepida* of India and *S. striata* of Formosa.—Ed.

The Blue-breast is plentiful in all cultivated parts of Egypt and Nubia.

RUTICILLA PHŒNICURA.

Not uncommon in Lower Egypt, and seen at Thebes. I found it at sea, migrating southwards, in the beginning of November. At that season it arrives in Malta, where a few spend the winter, but the majority proceed to Egypt and North Africa.

RUTICILLA TITHYS.

The two female specimens I procured in Nubia have the entire plumage ashy brown, excepting the russet of the rump and tail, and the margins of the eyelids grey; no trace whatever of a fringe on the secondary quills. These peculiarities agree with the *Erithacus cairii* of Degland. I forward the specimen for examination. It frequents the ruined forts and desert stony places, and is by no means common.

PRATINCOLA RUBICOLA.

Seen, now and then, all the way to the Second Cataract. Females predominate. I think there is more dull red on the Egyptian than on the English bird, especially on the rump and throat. The Whinchat was not observed.

DROMOLÆA LEUCOCEPHALA, Brehm: (Ibis, 1859, p. 298).

From its white head, this handsome Chat might be mistaken on wing for *Saxicola leucomela*; otherwise it is exactly like the Black Wheat-ear (*D. leucopygia*), with which it was often seen associating. Among the sterile wastes of Nubia, around deserted villages and the ruined temples of the Pharaohs, it delights to sport. On the carpus and bastard wing of two male specimens a white feather was observed. The average length is $6\frac{3}{4}$ inches.

DROMOLÆA LEUCOPYGIA, Brehm: (Ibis, 1859, p. 297).

Is closely allied to *D. leucura*. The two upper tail-feathers have about two-thirds of their distal extremities black, the tips of the others being more or less marked with the same colour, which seems to vary in degree in different specimens; the rest of the tail, vent, and lower portion of the back snowy white; remainder of the plumage glossy black, excepting the wings, which are brownish black in all my specimens (females). The average length is $6\frac{1}{4}$ inches. This is the most common Chat in Nubia, and is familiar in its habits, frequenting villages and ruined buildings along with the last species; it often flew on board our boat, and picked up crumbs on deck. A few white feathers were found interspersed among the black of the head in one of the female specimens procured in Nubia. I saw it at Thebes, but the bird is not common north of the First Cataract. I cannot account for the circumstance that, of the three specimens of *D. leucopygia* I shot in different parts of Nubia, all were *females*; and of four of *D. leucocephala*, all happened to be *males*.

SAXICOLA PALLIDA, Rüpp. Atl. t. 34. fig. *a.*—P. L. S.

My specimens (two females) were procured in the Thebaid and in Nubia; the length of one was 7 inches, the other $6\frac{12}{16}$ in. This species is not common, at least during the cold months. It frequents the open country, flies at great speed, and was observed catching insects on wing.

SAXICOLA LUGENS, Licht. Doubl. p. 33: Bp. Consp. p. 303.

Decreases in numbers southwards, and is not nearly so common in Nubia as in Egypt. The pale russet of the vent is always present in the Egyptian bird; whereas, in specimens I have examined from the Crimea and in India, the under tail-coverts were *white**. Average length of several specimens of both sexes, measured in the flesh, $6\frac{4}{16}$ inches.

SAXICOLA DESERTI, Rüpp.—P. L. S.

This is the common Desert Chat along the margin of cultivation in Egypt and Nubia. The russet of the upper parts of males was observed to vary in brilliancy, and the black of the throat in some was a good deal tipped with grey. The rump was pale russet in one male specimen procured at Thebes.

SAXICOLA ŒNANTHE.

Females predominate. The Egyptian Wheatears were larger than any I procured at Malta, the plumage a shade lighter, and bill heavier: they seem to agree with var. *rostrata*† of Ehrenberg. I have forwarded specimens‡.

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* *S. leucomela* (Pall.): Gray, Gen. of Birds, i. p. 178.

† Ibis, vol. i. p. 39.

‡ The specimens forwarded appear to be *S. isabellina*, Rüpp.—P. L. S.

PETROCINCLA CYANEA.

The Blue Thrush is not, apparently, common in Egypt. I procured one among the rocks at the First Cataract, but saw no more.

PYCNONOTUS ARSINOË (Licht.).—P. L. S.

This Bulbul is common in winter among the palm-trees at Wadee Halfeh, below the Second Cataract, which is probably its northern limit, as I failed in observing it further down. The plumage of both sexes is exactly alike. The male measures 8 inches, the female $7\frac{3}{4}$ in. in length. Generally seen in pairs, flitting among the palm-branches. Its mellow chirping note sounded sweetly through the grove, and brought back old associations of the Himalayan and Indian jungles, where I had been familiar with several of its close allies, to wit, the *P. hæmorrhous*, which it resembles, except in not having the red vent of that species.

ANTHUS RUFIGULARIS.

Is very common in fields both in Egypt and Nubia. The red throat in both sexes varies very much in extent and intensity; specimens may be procured scarcely different from *A. pratensis*; it is, however, at least, a permanent race, and comes in at Malta in spring, after the other species (which is a winter resident) has left. Its call is softer and more prolonged than that of the Titlark. The male, in the flesh, measures 6 inches, the female $5\frac{12}{16}$ in. in length.

BUDYTES FLAVA.

Is common in flocks in fields, among long grass and grain, all over Egypt to the First Cataract. Experience shows that *B. cinereocapilla* and *B. melanocephala* are most probably only varieties of this species. At Thebes, in December, I procured several individuals from one flock, in which the white streak above and behind the eye was wanting; the heads of the males varying from a lead-grey to olive-brown among many which had all the characters of *B. flava*. I have observed the same in Malta in April and September, during the birds' migrations, and at that time procured individuals with leaden-black heads, among others which might be considered good specimens of *B. flava* and

B. cinereocapilla. The yellow of the lower parts varies in extent and intensity in males, being often faint towards the throat, which in some is pure white. The mottling on the breast is often present in the adult. The female seems never to lose the white streak over the eye, and, except that the crown is darker than the back during the breeding-season, I have not been enabled to meet with any decided distinctions to match the grey- and black-headed varieties. In the South of Europe, North Africa, and Egypt it would appear that the *B. melanocephala* is the rarest variety; but the blackness of the head of this form is not, seemingly, so intense as that of the Indian bird (*B. viridis*)[*].

MOTACILLA ALBA.

I saw many on their way southwards in the end of October, when sailing between Malta and Egypt. It is the most common and extensively distributed of the birds of Egypt and Nubia, proceeding far south of the Second Cataract. Another bird, generally mistaken for the Swallow, and conjectured by Champollion to represent a Sparrow, is figured in the hieroglyphic legends as the type of 'an impure or wicked person.' I believe it to be the Wagtail; and it is worthy of remark that this bird is still called, in Egypt, 'Aboo Fussad' (the father of corruption[†])." I must say, I cannot understand what induced the "wise men of the East" to rank this delightful denizen of the country among their birds of bad omen.

MOTACILLA LUGUBRIS, Pall.

Is often seen among the rapids of the cataracts, and rarely elsewhere on the Nile. The male measures 6½ inches in length. The call is louder and sharper than that of *M. alba*, and resembles the chirp of the Canary. It is familiar, and often came on board our boat whilst lying in one of the creeks among the rapids of the First Cataract. There is considerable similarity, both in habits and appearance, between *M. lugubris* and the Indian *Henicuri*. Like the latter, it delights to sport around the foaming cataract, fluttering from one torrent-worn boulder to another, or to run with an agile step along the margins of the little eddying bays.

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[*] Blyth, Cat. As. Soc. Mus. p. 325.

[†] Wilkinson, *op. cit.* vol. ii. p. 214.

MOTACILLA BOARULA.

Was met with in its usual retreats, as far south as Nubia.

LANIUS DEALBATUS, De Philippi.—P. L. S.

I met with only one specimen of this Shrike, which was procured in Nubia. I see no difference between it and *L. excubitor*, although the semilunar lines of the female are wanting in the Nubian bird. I send a specimen for comparison with *L. dealbatus* of North Africa.

CORVUS CORAX.

CORVUS CORNIX.

The Raven is plentiful in Egypt and among the rocky parts of Nubia. I have seen small flocks in Lower Egypt in November. The Hooded Crow is rare in Nubia, but one of the most common and familiar birds of Egypt. I have taken its eggs in December. In Lower Egypt the Kestrel may be seen perched on the branch of a date-tree, screaming lustily, whilst the Hooded Crow, in a bullying and very impertinent manner, keeps pouncing close to him, and so tormenting the little Hawk that the latter has often to make a bolt of it. Again, as the Black Kite is stooping on his food, the Carrion Crow may be seen hastening to the scene, and frequently, by continual bullying, he will oblige the Kite to yield up the prize; for the Carrion Crow is a bold marauder, and never shrinks from disputing his priority even with the Griffon and Cinereous Vultures.

STURNUS VULGARIS.

Often observed in flocks in Lower Egypt during the winter months.

PASSER SALICICOLA (Vieill.): Bp. Consp. p. 509.

Is extensively distributed over Egypt, but is not common in Nubia. It may often be seen associating with the Domestic species. Flocks of the two frequently become intermixed; but their habits are in many ways different; and as there is seemingly no variety of one or the other, it may be conjectured that they never breed together. Both are gregarious, and build in trees; the Domestic Sparrow in houses also, preferring, as usual, the habitations of man and the dust and dirt of the crowded city and mud huts to the open country, where the other takes up its quarters. In November and December, during the ripening of the dhurra, Spanish Sparrows assemble in enormous numbers, and commit much damage to the crop*. In consequence of this at early morn men and boys armed with slings repair to the fields to frighten away the crowds of these birds which are seen scouring across the country and attempting to settle on the ears of grain. Any evening at that season, just as the sun dips behind the grey-white limestone-cliffs close to the ancient Necropolis of Thebes, dense flocks of Spanish Sparrows may be seen constantly passing southwards to their roosting-quarters in the little island at Luxor. The sudden rush overhead of thousands of wings is startling, whilst the eccentric-like oscillations and wheelings to and fro of the vast living masses are singularly strange and beautiful. I fancy Mr. Taylor must have mistaken the Domestic Sparrow for the Italian *P. italiæ* (Vieill.)†. I have not seen the bird with maroon crown and unicolor sides in Egypt or Nubia. The only variety of *P. salicicola* I have noticed is in Malta, where I made a large series, and found that although the Spanish is the Sparrow of that island, there are shades of plumage intermediate between it and the *P. italiæ*, showing a well-marked gradation from the one to the other. I must, consequently, differ from Dr. Bree ‡, and consider the Italian Sparrow more closely allied to the Spanish than to the Domestic species.

LINOTA CANNABINA.

ERYTHROSPIZA GITHAGINEA.

I put these two pretty little Finches together, as I was surprised to find them so often associated in Egypt. Along the confines of cultivation and rocky situations bordering on the desert, the clear tinkling call of the Trumpeter Bullfinch is heard, where often the colour of its plumage prevents its being seen. It breeds among the old tombs at Thebes, associating there with the Domestic Sparrow. In Nubia the Sparrow-Hawk may be often observed sweeping around a cliff, with one of these birds in its talons, pursued by the loud lamentations of the whole flock, uttered in their characteristic clear and musical notes. They begin to pair about the end of January; but for some time beforehand the males may be observed making constant approaches and coquetting around the females, who long resist their attentions. At that time, although the testes in the male are fully developed, the ovaries of the females are unchanged. This circumstance I have often noticed in respect to other species, viz. that constant attentions on the part of the male seem to be required before the aphrodisiacal tendency is aroused in the other sex, and moreover (as any one who has paid sufficient attention to the habits of gregarious birds will observe) that it is the handsomest, largest, and strongest males who are the most assiduous in the love-making season. In the above instance I noticed a marked confirmation of the latter remark, the "gallants" being the largest and richest in plumage. The same may be noticed in the case of Sparrows, Linnets, &c.

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* "When the ancient Egyptians meant to express '*evil actions*,' they drew a bird like a Finch."—*Bunsen.*

† Ibis, vol. i. p. 48.

‡ Birds of Europe, vol. iii. p. 131.

CERTHILAUDA DESERTORUM (Stanley): Rüpp. Syst. Ueb. p. 78.—P. L. S.

Is not uncommon, either solitary or in small flocks, around the pyramids and along the edge of the desert to Nubia. It runs at great speed, with a very erect carriage, stopping every few yards. The male varies from 8½ to 8¾ inches in length; the female, 8¼ to 8½. The plumage of the latter is more clouded. At Beni Hassan I came on a flock associated with the *Cursorius isabellinus.*

GALERIDA CRISTATA.

Is most plentiful during the cold months in all cultivated districts of Egypt and Nubia.

GALERIDA ISABELLINA (Temm.): Rüpp. S. U. p. 78.—P. L. S.

Is common in waste and stony deserts; for instance, around the Necropolis and valley leading to the Tombs of the Kings at Thebes. The transparency of its wings and their pale isabellacolour are very noticeable. All I shot were $5\frac{12}{16}$ inches in length. I saw it often in Nubia.

Mirafra, sp.[*]

Is not uncommon, and usually met with in pairs, on desert wastes and around ruined buildings in Nubia. The male measures $6\frac{1}{4}$, the female 6 inches in length. It feeds on seeds, and has the same habits as the last; its call-note is loud and Linnet-like. Sexes alike in plumage.

Ammomanes pallida, Cab. Mus. Hein. p. 125: Tristram, Ibis, 1859, p. 423.—P. L. S.

Is not uncommon on the deserts of Nubia, and usually seen in small flocks. It runs at great speed, and, like the other Sand-larks, stops every few steps. It has a call-note very like that of the Trumpeter Bullfinch, which it resembles in its flight. The iris is hazel. ♂ $5\frac{1}{2}$, ♀ $5\frac{1}{4}$ inches in length.

Oxylophus glandarius.

Is most usually seen solitary, sitting among the dense foliage of an acacia. It is tame, and easily approached. Often met with both in Nubia and Egypt.

Crateropus acaciæ (Rüpp.).—P. L. S.

I first noticed this Bush-babbler in a thicket of acacia near Der, the capital of Nubia. It frequents bushy situations along the river-bank, and is usually seen in flocks of from six to twelve. Like its congeners, its flight is feeble, and call chattering and garrulous, and uttered as it flies from bush to bush, where it often secretes itself. It breeds in January. There is considerable difference in size between the sexes and even individuals. Old males average 10 inches in length. The edges and inside of the mouth are yellow. I believe neither this nor any of the subfamily *Timalinæ* is found northward of Der, at all events below the First Cataract. The above species seemed to increase towards the Second Cataract, where it is common in bushy situations. The iris in the adult is yellow, paler in young birds.

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[*] This *Mirafra* I cannot at present satisfactorily determine. It does not seem to be included in Rüppell's or Heuglin's catalogues. I thought it might be *Mirafra cordofanica*, Strickland (P. Z. S. 1850, p. 218, pl. 23), but it appears to be different from that species.—P. L. S.

COLUMBA LIVIA.

In Egypt it is not easy to define the limits between the wild and domesticated Pigeons, their plumage being so much alike. The denizens of the dove-cots all preserve the leading characteristics of *C. livia.* Many-coloured birds are uncommon. The two black bars on the wings, and single black bar on the tail, with the white on the edges of the outer tail-feathers, were present in all the tame birds I have examined. The permanence of colouring may be owing to the circumstance that no pains whatever are taken to improve the breed. Each town and village has many dove-cots, which are usually the joint property of several persons; the Pigeons are only kept for their dung, and allowed to shift for themselves. In some districts, as at Sioot, it is marvellous the numbers seen crowding round these mud-built cots, or feeding in the fields. The most common Domestic variety answers to the *C. schimperi* of Bonaparte; but individuals in all respects agreeing with *C. livia* and *C. schimperi* may also be met with among the rocks. No doubt stragglers from the towns often take to the wild life; indeed, at best they are only half domesticated in the dove-cots, where I have seldom seen a pied or white pigeon. The many-coloured varieties are, however, reared in the native houses, and sometimes join flocks of the other; but they rarely interbreed. From these circumstances it would appear that the Domestic Pigeon of Egypt has reverted very much towards its original wild state. On one of the walls of the Temple of Medinet Haboo is a sculpture of the time of Rameses III., B.C. 1297, representing that famous monarch as having just assumed the crown of Upper and Lower Egypt. The procession is seen moving on in regal state, and in all the pomp and splendour of the time, whilst a priest is letting off four Carrier Pigeons to announce the glad tidings to every quarter of the globe. This is very interesting, as it shows Pigeons were then used for the purpose of conveying information. According to Horapollo, the flesh of Pigeons was greatly esteemed, and there are records of their having been eaten as early as B.C. 3000.

TURTUR SENEGALENSIS.

Universally distributed over the habitable parts of Egypt and Nubia. Breeds in Cairo and other towns in the lower country. Horapollo says, when the ancients wished to represent "a woman who remains a widow till death," they drew a *black Dove.* Neither Doves nor Pigeons have been found embalmed.

PTEROCLES EXUSTUS.

Is common in Upper Egypt, where, with the other species, it is known by the native name "Gutta." Its pointed tail and black belly distinguish it on wing, when it is likewise recognized (as, indeed, are all the Sand-Grouse) by its continual gurgling call. The various species live much in the same way, repairing to the desert during the day, and the young wheat fields, &c., at dusk and early morn. They feed extensively on the dhurra. This Pintail breeds in June; its nest is simply a hole in the sand, with a circle of dried grass to preserve the shape. Several old nests were seen near Ombos, below the First Cataract. The wounded bird spreads out its tail and wings, hiding its head under the breast, and emits a series of chuckles, like a fowl. Although its flight is strong, it is not difficult to shoot, provided the sportsman is not too precipitate. As I found in India, its flesh is very dry; indeed such is the case with all the family: the only passable way of making them fit for the table is by removing the skin before they are cooked.

PTEROCLES CORONATUS, Licht.

The only occasion I met with this handsome Sand-Grouse was whilst seated among the rocks of the Second Cataract, watching Vultures devouring a camel. A flock alighted on a sand-bank, and rushed in a body to the water, and drank like Pigeons. I was fortunate in being enabled to bag two brace on that occasion. The measurements of both sexes were alike, being in length 12 inches. I saw *P. senegalensis* often on wing, and identified several specimens in collections made in the Thebaid. I could not learn that *P. alchata* has been met with in the country.

GALLUS, sp.

The bird called "Chick" by antiquaries, and which represents the vowel *o* or *u,* as in the Oval of SHOFO, is probably the young of the Domestic Fowl. The rudimentary state of the wings, and bulging of the abdomen at the vent, are in favour of its being at least the young of some species. Fowls, however, do not appear on the monuments of Egypt, perhaps for the reason assigned by Sir Gardner Wilkinson, that they were in universal use as an article of food.

AMMOPERDIX HEYII (Temm.).

This species is closely allied to *A. bonhamii* of Afghanistan and the north-western Punjaub [*]. It has likewise a marked resemblance to that bird in habits, frequenting bare rocky ravines and low hills; it runs at great speed, and flies strongly, uttering a loud clear whistle. When alarmed, they disperse over the country, and secrete themselves under rocks and fallen boulders. A female measured 10 inches in length. The flesh is pale and tender, but wanting in flavour. The iris is true brown; bill orange, and legs yellow. It is evidently partial to localities; in Nubia I met with small coveys among the rocky parts at Dendor. The traveller Burckhardt mentions a "small species of Partridge with red legs" which he killed occasionally in Nubia [†].

COTURNIX DACTYLISONANS.

Is distributed over Egypt and cultivated parts of Nubia, assembling in the wheat-fields in February and March, before its migration northwards across the Mediterranean, which takes place during the middle and latter part of April. It appears among many votives to the gods, and in the bird-catching scenes on the tombs, &c.; it was not sacred, and does not appear to have been found embalmed, possibly for the same reason as the Domestic Fowl.

ŒDICNEMUS CREPITANS.

Is not uncommon, singly or in flocks, on the stony and desert tracts of Nubia and Egypt.

CURSORIUS EUROPÆUS.

Was seen several times, and always in small flocks, at different points on the Arabian side of the desert, between Syene and Cairo.

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[*] *Vide* Gould's 'Birds of Asia,' and Author's list, Proc. Zool. Soc. 1858, p. 503.

[†] 'Travels in Nubia.'

ÆGIALITES MINOR.

Is plentifully distributed over the shallows of the river, even in Nubia. Muddy fields, after the subsidence of the river, are favourite resorts of this little Plover. Neither *Æ. hiaticula* nor any other species was observed.

PLUVIANUS ÆGYPTIUS.

To this species, as well as the Spur-winged Lapwing, the name *Zic-Zac* is applied by the natives, who, in bird-nomenclature as in other subjects, evince no great accuracy or perception. Every bird of the shape of a Goose or Duck is a "Wiz," according to their naming. It is not easy to see the reason why they should apply the above to the Black-headed Plover, unless that it frequents the same situations, and is consequently mistaken for the other, as this handsome Plover has neither in plumage nor voice any similarity to the Spurwing. The Black-headed Plover is usually seen in pairs, and breeds about March; its flight is rapid, and call loud and piping. One series of notes, when alarmed, resemble the words *chip-chip-hoit,* which it utters on wing, as it wheels past your boat and settles on the bank. It is not at all common above the First Cataract, owing to the absence of sand-banks and islands.

HOPLOPTERUS SPINOSUS.

Is very closely allied to the Lapwings (*Vanellus,* Brisson), both in appearance and habits. There appears to me better reason for considering this species the *Trochilos* of Herodotus[*] than the last, inasmuch as the well-known narrative of the Greek historian, strange to say, is still current among the Egyptians, and with reference to this bird, which they state, in its capacity of leech-catcher to the Crocodile[†], is sometimes shut up within the jaws of the animal when the latter falls asleep on a sand-bank. On such occasions the Zic-Zac (زقزاق, from its call) applies his spurs to the interior of the Crocodile's mouth, by way of refreshing the memory of the latter that his faithful henchman is within, when the monster's jaws reopen immediately, as if his reptilian majesty was sorry for his obliviousness. This addition to the old story was given me on good authority, as being very generally believed among the Nile boatmen. As to the Black-headed Plover, I see no cause to sustain its claim in preference to this species, nor even to the Common Sandpiper and other small aquatic birds which frequent the sand-banks along with Crocodiles. The Spurwing is usually seen in pairs, but it does not breed until March and April. The noisome and garrulous voice of the Zic-Zac has gained it notoriety with Egyptian travellers. Its loud calls, as it stands on a sand-bank jerking its head up and down, or wheeling in circles overhead, serve as a warning to the Crocodile to seek his muddy bed, and many a wary bird to be on the look-out. What Nile voyager who, in vain attempts to outmanœuvre a flock of Geese, has not had his whole labour lost by this prattling intruder?

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[*] B. i. 68.

[†] Burckhardt says it feeds likewise on the digested food thrown up by the Crocodile. ('Travels in Nubia.')

VANELLUS CRISTATUS.

Replaces the last species to a great extent in Upper Egypt and Nubia. It is common in flocks in fields and along the river-banks, and is remarkably mute during the winter months, its well-known "*pee-wit*" being seldom heard. It is the head of a Lapwing that is represented on the hieroglyphic figures upon the "augural staff" of the gods. This species is also called Zic-Zac by the natives.

GRUS CINEREA.

Was often seen in large flocks in Lower Egypt. Among the interesting zoological scenes depicted on the walls of the tombs at Beni Hassan is a flock of these birds being driven along with other royal presents. Horapollo says, "When they wished to signify a man skilled in heavenly matters, they drew a Crane flying." The great altitude this bird often gains may have suggested that idea. The hieroglyphic figure alluded to appears to me to resemble more the Cormorant than the Crane.

CICONIA ALBA.

CICONIA NIGRA.

The Great White Heron is often observed in Lower Egypt in large flocks, associated with Night-Herons, Spoonbills, Pelicans, &c. The Black Stork is not so shy nor gregarious, and is frequently met with in fields and by the side of pools.

ARDEA CINEREA.

NYCTICORAX GARDENI (Jard.).

The Cinereous Heron is plentiful all along the river in suitable places. The Night-Heron was often seen, and frequently in large flocks, with other Waders. A Heron is observed on the walls of the tombs with two long plumes; and the fact of being generally coloured a bluish grey would lead to the supposition that one or other of the above is meant, and not the *A. bubulcus* of Savigny, as stated by Wilkinson [*]. I am inclined, therefore, to think the "Tufted Benoo" (one of the emblems of Osiris) is the "*Night-Heron.*"

ARDEA GARZETTA (L.)?

Flocks of a small White Heron with black bill were often seen in the distant and inaccessible shallows and mud-banks, also frequently on wing; I could not, however, ascertain with certainty whether they belonged to the above, to *A. alba* (L.), or to the *A. nigrirostris* of Bonaparte.

BUPHUS RUSSATUS, Bp.

This bird feeds chiefly on frogs, of which it devours large numbers. The call resembles the "bleat" of sheep. The colour of the iris varies from a pale to a bright yellow. The only difference I can perceive between this and the Paddy-bird of India (*A. caboga,* Franklin) is, that the yellowish white, instead of being on the crown, is on the forehead (in Indian specimens at least) during the winter season.

I have seen a specimen of *Ardeola minuta* (Bp.) which was killed in Upper Egypt; and on two or three occasions, below Beni Hassan, I identified flocks of Spoonbills.

IBIS RELIGIOSA.

I can find no reason for considering the Sacred Ibis to have been a native at any time of either Egypt or Nubia, and I doubt very much if it is ever seen south of its haunts at the junction of the Blue and White Nile. Heuglin found it on the coast of Abyssinia. No doubt it was imported by the ancient Egyptians; and, judging from the numbers which are constantly turning up in the tombs and pits of Sakkara and elsewhere in Egypt, and the accounts of Herodotus, Diodorus, Strabo, &c., the Ibis must have been very numerous, and, like the Brahmin Bull in India, "did as it choosed." The last-named writer says, "Every street in Alexandria is full of them. In certain respects they are useful, in others troublesome. They are useful, because they pick up all sorts of small animals and the offal thrown out of the butchers' and cooks' shops. They are troublesome, because they devour everything, are dirty, and with difficulty prevented from polluting in every way what is clean and what is not given to them."* The late Mr. Rhind informed me that he found several jars full of white eggs as large as a Mallard's, along with many embalmed bodies of Ibises, at Thebes; these, with his valuable collection, have since been presented to the Royal Museum of Antiquities in Edinburgh.

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[*] *Op. cit.* vol. ii. p. 225.

Mummied Ibises are usually found alone, but sometimes with other sacred animals; and although Hermopolis was the patron city of the bird, as Buto of the Kestrel and other Hawks, we find it also among the tombs of Thebes and Memphis. Some authorities think both species of *Ibis* were sacred. The *I. falcinellus* is, I believe, occasionally seen in Egypt, as it is pretty common in the E. Atlas †, and I have shot several in Malta in the beginning of May, and seen others. No doubt the White Ibis was imported into Italy, and kept about the temples of Isis ‡. It was the emblem of Thoth, the scribe or secretary of Osiris, whose duty it was to write down and recount the deeds of the deceased; in consequence the bird is constantly seen on the ancient monuments under various forms. In the gizzards of the mummied specimens unrolled at Thebes I found large pebbles, beads, many shells of *Paludinæ*, but chiefly remains of coleopterous insects, especially of a small black beetle which is common on dungheaps along the river's bank. All the paintings at Beni Hassan and the Tombs of the Kings represent the *I. religiosa*.

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* Strabo, lib. xvii. c. 2.

† Tristram.

‡ See Bulwer's note to b. i. p. 34 of 'The Last Days of Pompeii.'

NUMENIUS ARCUATUS.

Is not uncommon in Egypt during the winter months.

TRINGOIDES HYPOLEUCA.

Is constant all the way to the Second Cataract, and beyond.

TRINGA TEMMINCKII.

Is plentiful about Alexandria and the Delta. I did not see it above Cairo.

TRINGA OCHROPUS.

TRINGA CALIDRIS.

The Green Sandpiper was seen in flocks in the fields near Cairo during the subsidence of the river in November; and solitary individuals were often met with by the sides of pools and canals all the way to the Second Cataract. *T. calidris* was plentiful about Alexandria in February. Both the Common and Jack Snipe were occasionally seen all the way up to the confines of Nubia; and a few specimens of the Painted Snipe (*Rhynchæa bengalensis*) were shot by some friends near Siout. A *Fulica*, apparently of the same size and colour as *F. atra,* with a white crest, was several times seen on the river between Cairo and Thebes. I procured several specimens of the Stilt (*Himantopus melanopterus*) above Cairo. It is not common.

PHŒNICOPTERUS ANTIQUORUM.

Several flocks were seen in Egypt. According to Bunsen, the Egyptians took their idea of *red* from the Flamingo, and accordingly drew it when they meant to express that colour.

ANSER ALBIFRONS.

Is the most common Goose on the Nile, and usually seen in vast flocks at daybreak, returning to the shallows from feeding all night in the wheat-fields. This species decreases southwards, and is rarely seen beyond the marsh at Edfoo. The young birds have a black line around the base of the bill, and no bars on the breast and belly.

The White-fronted and also, seemingly, the Grey Goose were domesticated by the early Egyptians. There is a characteristic delineation in the British Museum, where the steward, in the presence of the owner, is counting geese and ducks, whilst their feeders, one after another, are making their obeisance to their master. The above species appears likewise among the votive offerings on the temples. I especially noted, in the little temple of Amada, in Nubia, a scene of this description. The colouring was still clear, and the markings distinct, in consequence of having been sealed up for many centuries by mud, with which the early Christians bedaubed the walls of the temples, in order to efface all records of the idol-worship of their predecessors, little aware at the same time what delightful pictures they were preserving for future generations.

CHENALOPEX ÆGYPTIACA.

Is generally seen in small flocks, and although not so numerous as the last, is more extensively distributed. A few were noticed near the Second Cataract. This is assuredly the "Vulpanser"* of Herodotus; it appears frequently on the monuments, and is often delineated with great artistic skill. The richness of the plumage and remarkable appearance of this species, compared with the other Nile Geese, would have naturally attracted the early artists. Wherever the colouring has been preserved, we find usually the head and neck painted red; the breast and belly blue; the back yellow, with the tips of the wings red; the tail with narrow lengthened tail-feathers like the Pintail Duck, which many of the Karnak intaglios more closely resemble. The Goose was the emblem of Sib, the father of Osiris, but was not sacred; it signified a "son," and consequently occurs very often in the Pharaonic ovals, signifying "son of the sun." Horapollo says it was adopted in consequence of its affection for its young.

CASARCA RUTILA.

Occasionally a single bird, at most two, was observed below Siout.

MARECA PENELOPE.

DAFILA ACUTA.

RHYNCHASPIS CLYPEATA.

QUERQUEDULA CIRCIA.

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* Book ii. 72.

QUERQUEDULA CRECCA.

ANAS BOSCHAS.

NYROCA LEUCOPHTHALMA.

The Wigeon was identified on two occasions from specimens shot above Cairo, and seen on wing. The Pintail is not uncommon in the shallows of the low country. The Shoveller, Mallard, and Teal are met with in Nubia. The Ferruginous Duck seems to be the most common species; I noticed it among the rapids of the Second Cataract. A Garganey Teal was shot. The ancient Egyptians were evidently in a measure dependent on the wild-fowl of the river. Bird-catching scenes are constantly represented on the temples and tombs. On the walls of the lately excavated temple at Edfoo is observed a scene where a net is being closed over numbers of wild Geese, Ducks, Waders, &c. The Coot is seen running across the meshes, whilst fish are swimming below. Strange to say, along with these are several Oryxes, Gazelles, and a Stag with antlers. The latter idea is decidedly Roman, of which age are both the temple and sculptures. The bird part of the scene is evidently copied from what took place constantly in the Edfoo marsh in the neighbourhood, which has been famous from time immemorial for the quantities of its water-fowl. There are several other strange scenes on the walls of the above temple, representing the hunting of the Hippopotamus.

PHALACROCORAX CARBO.

Is plentiful below Thebes northwards. Flocks roost in the date-trees. It breeds at Manfloot. I have frequently noticed a small Cormorant, possibly *P. pygmæus.*

PELECANUS ONOCROTALUS.

Is usually seen singly or in large flocks. It is not common in Nubia. According to Horapollo, the Pelican was the symbol of a "fool," from its inattention to its young. There is no more characteristic scene on the river than, when the sun is setting in all his fiery beauty, to witness Pelicans, one after another, gliding along so close to the surface of the glassy Nile that they appear as if propelled over a lake of ice.

Gelochelidon anglica.

Sylochelidon caspia.

Both species are common in Lower Egypt; and occasionally the Gull-billed Tern was seen in Nubia.

Xema ridibundum.

Is very plentiful in Lower Egypt during the subsidence of the river in November, especially about the sluices, where the natives catch small fish. There it and the Black Kite may be seen in great numbers, darting on the banks where the refuse of the fish had been thrown.

Larus fuscus.

The Herring-Gull is common on the river below Beni Hassan. I saw a solitary individual near the Second Cataract; but it is not by any means so frequent in the upper country. I have seen *Larus canus* on wing near Cairo. A little Diver was occasionally noticed in the river, even as high as Thebes, and the same species is very common in the marshes about Alexandria.

II.—*Remarks on the Value of Osteological Characters in the Classification of Birds.* By Alfred R. Wallace.

May I beg for a few lines to correct a statement of M. E. Blanchard, and to show that it is not by osteology *only* that correct principles of classification are to be arrived at? In his 'Recherches sur les Caractères Ostéologiques des Oiseaux,' p. 75, M. Blanchard states that "one of the best-characterized and best-defined groups in the class of Birds has been misunderstood by all naturalists except one only (M. l'Herminier)." He then goes on to explain that this group consists of all Passeres except the families now generally classed as Fissirostres (including the Hummers, Swifts, Hoopoes, and Hornbills) and Scansores (including the Barbets and the *Musophagidæ*). M. l'Herminier, it seems, had founded this great group more than thirty years ago from an examination of the sternum, but his work had remained almost unknown to ornithologists; and M. Blanchard has now by his own more extensive researches established the same fact. Previous, however, to M. Blanchard's publication, and without having ever seen or heard of M. l'Herminier's work, I had arrived at identical results from a consideration of the general external structure, habits, and affinities of the birds in question, and with but little or no knowledge of their osteology. In my paper on "A Natural Arrangement of Birds" in the 'Annals and Magazine of Natural History' for 1856 (vol. xviii. p. 214), I separate from the Passeres every family which M. Blanchard has separated, and of the rest I remark, "There remains an extensive series of species which we believe constitutes *one great group* of equal value with those we have already defined. This group may be called the normal or typical Passeres, and consists of above thirty-five families, containing between three and four thousand species, or at least half of the known birds. These, we believe, are too intimately connected with each other to allow of their being separated into a few great divisions without violating many of their natural relations. They have all normal or $\frac{3}{1}$-toed feet, which are never so short or weak as to be unadapted for progression. The bill is always moderate in size and form, and in the few cases where it is peculiarly modified (as in some species of *Dendrocolaptidæ*) other species in the same family possess the normal form. There is also a remarkable moderation in size; for though the species are so numerous, there are none either so large or so small as are to be found in the two abnormal groups. There is also a much greater uniformity in texture of plumage and in form, as well as in habits, which binds the whole into *one compact and natural group*. It is also a most important point to consider that there are no isolated families—none but have numerous points of connexion and transition with others; and to such an extent is this the case, that there is scarcely an extensive family group about the limits of which ornithologists can agree. The Thrushes, Warblers, Flycatchers, Chatterers, Tanagers, Finches, Shrikes, Bush-Shrikes, and many others are in this condition, and offer a striking contrast to the families of the Fissirostres and Scansores, about the limits of every one of which there is scarcely any doubt or difficulty whatever. Here then we have three groups, one of which, though very much more extensive than the others, offers less variation in the form and size of the species and in the modifications of their principal organs. Correct principles of classification would surely oblige us to consider the three groups of only equal rank." This extract, I think, proves that I both fully appreciated the *unity* of this group and accurately defined its limits some years before M. Blanchard's publication; for though it is (in its separate form) altogether without date, yet he quotes works in 1857—a year after the publication of my paper *.

No one can be more convinced than myself of the utility of osteology, and especially of the *sternum*, in the classification of birds, and I sincerely trust this great work may be brought to a conclusion. I cannot, however, allow that *osteological* characters are an all-sufficing guide. Like every other character taken singly, osteology is a very uncertain and irregular test of affinity, and is, moreover, in almost every case accompanied by parallel external characters. Sometimes one sometimes another part of the bird's organization has varied more rapidly, so that one group exhibits the most striking constancy of a part which in another group is subject to extreme modifications. The sternum is no exception to this rule, and by following it alone we should make the greatest errors in classification. For example, the sterna of the Finches and the Flycatchers are scarcely distinguishable, notwithstanding the great dissimilarity in almost every part of the structure of these birds—their bills, their feet, their plumage, their habits, food, and digestive organs. On the other hand, the sterna of the several genera of the *Caprimulgidæ* differ from each other more than do those of the most distinct families of the restricted Passeres. The Bee-eaters, the Barbets, and the Woodpeckers, again, are three very distinct families, which, in a classification founded upon all parts of a bird's organization, cannot be brought in close contact; and yet their sterna, according to M. Blanchard, much resemble each other. It is evident, therefore, that the whole structure of a bird and its corresponding habits may be profoundly modified, and yet the sternum may retain a very close resemblance to a common form; and, on the other hand, the sternum may undergo important changes, while the general organization and habits are but little altered.

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* M. Blanchard's paper was published in the 'Annales d. Sc. Nat.' for 1859. See Ibis, 1860, p. 93.—Ed.

To prove that true affinities indicated by the sternum are also in most cases exhibited in external characters, it is only necessary to refer to the paper above quoted, in which the relation of the Hummers to the Swifts, and the separation of the Hornbills, the Rollers, the *Musophagidæ,* and the Parrots from the Passeres, were pointed out from the consideration of such characters alone. In that paper, however, I made two important errors, namely, putting the Todies with the Passeres (from the descriptions given of their habits), and including the Swallows among the Swifts. The character of the sternum is undoubtedly of great importance in finally settling such points as these.

I also at that time included the *Psittaci* among the Scansores; but I am now quite convinced that they deserve to rank as a primary division of the class of Birds, a rank to which the great peculiarity of the sternum, the large brain-cavity, and highly organized cranium fully entitle them.

With regard to M. Blanchard's determination of affinities from the body of the *sternum* only, without its appendages, I must remark that it often leads to erroneous results. For example, he says that the *sterna* of *Merops* and *Tamatia* do not differ enough to deserve a separate description; and he includes *Megalæma* with *Tamatia* in one section, as having the same form of sternum. He notices some differences in the *Picidæ,* but remarks on their resemblance to *Megalæma* and to the Toucans. Now in all these points an examination of the entire sternum, with the *furcula,* coracoids, and clavicles attached, leads me to very different results. The sterna of *Merops* and *Nyctiornis,* compared with those of two species of *Megalæma,* seem to me to show no resemblance whatever: in almost every part they present important differences of form, surface-texture, and proportions, while the *furcula* and coracoids are so different in the two, that I should unhesitatingly place them far apart, in at least different tribes or primary divisions of the Passeres. On the other hand, the sternum of the Toucans (*Pteroglossus*) resembles that of *Megalæma* most closely in every particular, and especially in the extreme weakness and complete separation of the two arms of the *furcula*—a character which I am not aware exists in any other families of birds. The sternum of the *Picidæ* presents many important differences from those of all these families, and fully bears out the isolation which their external characters exhibit. It differs much from *Megalæma* and *Pteroglossus* in its general form, as well as in details of structure, and still more from *Merops*. It seems to approach the typical Passeres more than either of the other groups to which M. Blanchard compares it; but its peculiar pyramidal shape, so remarkably narrowed at the anterior extremity, and its very short clavicles distinctly separate it as a characteristic and isolated form. It will, therefore, I think, be admitted that the affinities indicated by the complete sternum and appendages are much more in accordance with those derived from external form and structure, and from habits and economy, than those which M. Blanchard deduces from the body of the sternum alone.

These remarks are made in no spirit of depreciation of this very interesting and valuable work, but for the purpose of showing that isolated characters may lead to erroneous conclusions from whatever part of the organism they are chosen, and that in this respect osteological have no positive superiority over external characters. M. Blanchard tells us, in the introduction to this first instalment of his work, that he proposes to examine successively each separate part of the bird's skeleton. His future researches may therefore seriously modify the conclusions he has hitherto arrived at. I cannot but think, however, that he would have produced a more satisfactory work, if he had based it upon the comparison of the entire sternum, with its appendages attached, and also on the cranium, these two parts being of the greatest importance in classification.

It has been well observed by Professor Owen that those parts of an animal which have the least immediate connexion with its habits and economy are exactly those which best exhibit deep-seated and obscure affinities. The wings, the feet, and the beak in birds may undergo the most extraordinary modifications in the same group in accordance with differences of habits and of external conditions, while at the same time such apparently insignificant characters as the general colouring, the texture of the plumage, the scaling of the tarsi, or the colour and texture of the eggs remain constant, and reveal the true relations of the species. Thus it is that the form of the sternum is of such importance, since it has no immediate dependence on external form and habits. The Sparrow, the Flycatcher, the Wren, and the Sunbird, all have one characteristic form of sternum; while between those of the Swallow and the Swift there is the greatest diversity.

It is evident also that the modifications of form immediately dependent on habits and external conditions are generally to be seen in the skin even better than in the skeleton of a bird. These are principally changes of form, size, and proportion in the bill, the feet, and the wings, which are excellent characters for distinguishing genera and even families; while for determining the true affinities of isolated groups we must have recourse to those characters which, having no direct dependence on habits, &c., are often persistent in a remarkable degree. Of these, no doubt, the sternum is of the highest value; but there are many others of almost equal importance. Such are the texture of the plumage; the form of the feathers and their arrangement over the surface of the body; the form of the nostrils; the scutellation of the tarsi; the mode of nidification, with the form, texture, and colour of the eggs; the covering of the young bird, and its changes of plumage; peculiarities of food, characteristic habits, and peculiar attitudes and actions.

As an instance of the value of such apparently trifling characters as the last, I may mention that the first time I saw a Roller (*Coracias temmincki*) alive, I was at once satisfied it was a Fissirostral bird, from a peculiar jerking motion of the head and tail when it alighted, which is common to Kingfishers, Trogons, Bee-eaters, and Motmots, but never seen in the typical Passeres. In like manner the motions of the *Eurylæmi* convinced me that they were not Fissirostres, but typical Passeres, as mentioned in my paper quoted at the beginning of these remarks (Ann. Nat. Hist. 1856, p. 199).

Now that true principles of classification are becoming so much better understood, we may, I think, hope that the chaos which has so long existed in ornithology will soon give way to a truly natural system which must obtain general acceptance.

III.—*List of the Birds observed in the Islands of Malta and Gozo.*

By Charles A. Wright.

The following birds, with a few exceptions which are noted, have been observed by me in Malta and the adjacent islands during the last ten or twelve years. As no complete catalogue of the birds of Malta has appeared since that published by Signor Schembri in 1843*, and as in the lapse of twenty years new facts have come under observation and mistakes become apparent, I have thought a fresh list might prove useful. In this will be found 30 species† not contained in that of Schembri. These raise the total to 253 species, considering the Sparrows of Malta as belonging to one species (*Passer salicicola*), and the *Motacilla cinereocapilla* and *M. melanocephala* of Bonaparte as varieties of *M. flava* of Linnæus. Only ten or twelve species are resident, that is, remain with us all the year round, Malta being merely a resting-place for birds in their periodical migrations across the Mediterranean.

From Schembri's list should be omitted *Vanellus gregarius* and *Fringilla amadava*, both of which were erroneously included, the former on information from ignorant persons, and the latter from the fact of two examples having been taken in Malta many years ago, but which were doubtless escaped captives. *Perdix petrosa*, Lath., noticed by Temminck and Savi, and *Perdix fran-*

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* Catalogo Ornitologico del Gruppo di Malta, da Antonio Schembri. Malta, 1843.

† These are—

1. Aquila nævia.
2. Pandion haliaëtus.
3. Circus pallidus.
4. Falco barbarus.
5. —— eleonoræ.
6. Strix otus.
7. Hirundo daurica.
8. Caprimulgus ruficollis.
9. Muscicapa atricapilla.
10. Alauda lusitanica.
11. Anthus cervinus.
12. Turdus viscivorus.
13. Saxicola aurita.
14. Phyllopneuste trochilus.
15. Hippolais icterina.
16. Cettia melanopogon.
17. Charadrius cantianus.
18. Limosa rufa.
19. Tringa temminckii.
20. Arenaria calidris.
21. Rallus bailloni.
22. Fulica cristata.
23. Stercorarius catarrhactes.
24. Larus audouini.
25. —— gelastes.
26. Anas casarca.
27. Fuligula ferina.
28. —— rufina.
29. Podiceps auritus.
30. Uria troile.

colinus, Lath., by Bree and others, have no claim to be Maltese. Barbary Partridges have, it is true, been killed in Malta; but considerable numbers being brought over from Barbary, it is not improbable that they were fugitives. In 1808 some of these birds were turned out on the rocky islet of Comino, between Malta and Gozo, where they multiplied, but for many years have been extinct. Other necessary corrections will be met with in the following list, in which, as a general rule, I have followed the nomenclature of Degland.

As might naturally be expected, the arrivals of birds chiefly take place at the periods of the vernal and autumnal equinoxes, during their migration at the former season to Europe, and at the latter on their return to Africa. Occasional visitors appear during the winter months, and a few in summer. Birds generally arrive and leave at night, and do not usually remain more than one day, thus giving little opportunity of studying their habits. Some species, however, remain a few months on the island, and several of them breed here *en route* to Europe; whilst flocks, chiefly of Grallatores and Natatores, may be seen passing high in the air, without alighting. Taking into consideration the nature of the island, the absence of forest-trees, the want of rivers and marshes, and the dense population spread over every part of the country, it will be apparent that, even putting aside the crowds of native sportsmen who sally out during the shooting-seasons, there is little inducement to migratory birds to prolong their stay.

The influence exerted by the wind over these migrations is doubtless very great, and affords an interesting point for elucidation. Owing to the changeable and local character of the winds in the Mediterranean, it is not easy to lay down any general rules with much precision; but observation has shown that the following facts are pretty constant. In spring, the Quails and most of the short-winged and smaller birds, and such as are of weak flight, although not unfrequently arriving in calm weather, generally appear during the prevalence of winds from the N.N.W. to S.S.W., and in autumn, with those from the S.S.E. to N.N.E., being probably stopped in their migratory course, and driven to seek rest on our shores. Sometimes a fresh breeze suddenly springing up from any point will bring with it numbers of the smaller birds; and if it increase in strength, the larger kinds and those of greater powers of flight will also make their appearance. But there appears to be no rule for birds strong on the wing, which arrive under all circumstances of weather and with winds from all points of the compass.

It will be seen from this list that Malta can boast of none but European forms; but this is not surprising, when we consider that, from an ornithological point of view, the northern coast of Africa, from Tunis to Cape Spartel, is not much more than a province of Europe, and that the avifauna of Tripoli, although having relations with Egypt, is mostly European.

Malta is so little known to English readers, except in its qualities of a fortress and a coaling-station, and so generally considered as little more than a huge rock, that ornithology in connexion with it seems almost paradoxical. Burnt up and barren under the African sun of its summer, with the rains of winter it rises, like a phœnix, from its ashes to verdure and life. It more especially in spring that in the rocky 'wieds' we find the bright-coloured Bee-eaters, Orioles, and Rollers sheltering themselves from boisterous winds, while the dense foliage of the Carob-trees (*Ceratonia siliqua*) and orange-groves serve them and many others for shade and roosting-places. At this season the Harriers scour the rocks and corn-fields; the Quails crouch amongst the tangled stalks of the crimson 'Sulla' (*Hedysarum coronarium*); the Larks (*Alauda brachydactyla*) hover over the rocky wastes, covered with the aromatic-smelling *Thymus capitatus*; and the numerous thickets of prickly pear (*Cactus opuntia*), fig- and pomegranate-trees, provide resting-places for Warblers. The air is perfumed by thousands of wild flowers; here and there rises a tall palm; and the Arab houses, language, and origin of the inhabitants indicate, despite Acts of Parliament and a European fauna, Malta's alliance with Africa and the East.

1. NEOPHRON PERCNOPTERUS. (Egyptian Vulture.)
Aikla, Maltese.

This is the only species of Vulture which I have observed in Malta, and it is merely an accidental visitor. A specimen in my collection was killed on the east coast of the island on the 30th September, 1861. It appeared to be a bird of the year, and on dissection proved to be a female.

2. **AQUILA HELIACA.** (Imperial Eagle.)

The capture of one specimen is recorded in Signor Schembri's Catalogue.

3. **AQUILA NÆVIA.** (Spotted Eagle.)

A bird, believed to be of this species, but mistaken for a young Golden Eagle, was shot in September 1859; and another, a male, was killed on the 18th October, 1862, and kindly sent to me by Dr. Gulia, the author of several works on the local zoology and botany.

4. **PANDION HALIAËTUS.** (Osprey.)

Arpa, Maltese.

Although by no means common, this bird not unfrequently shows itself, in spring and autumn, on the coast and in our creeks and harbours. One was shot, several years ago, at the head of the Marsamuscetto Harbour, with a fine mullet in its talons, which was also taken. Two others were observed at different times in the same locality by W. C. P. Medlycott, Esq.; and I am informed of a fourth which was seen in the Great Harbour on the 28th October, 1860. A fifth was killed at St. Julian's, on the 15th October, 1861. It had just caught a mullet, of two pounds' weight, and retired to the shore to feast on it. I have a specimen which was taken alive at sea, on the rigging of a ship, about a hundred miles to the eastward of Cape Passaro. Two or three were seen, in the spring of this year (1863), in the Marsamuscetto Harbour.

5. **CIRCAËTUS GALLICUS.** (Short-toed Eagle.)

Very rare, and not of annual occurrence. A fine specimen in my collection was killed at Gozo, at the end of August 1857.

6. **PERNIS APIVORUS.** (Honey Buzzard.)

Kucciarda, Maltese.

Passes annually in March, April, and May, and again in September and October, and is not uncommon. Flocks of six to a dozen are sometimes seen migrating together.

7. Milvus regalis. (Common Kite.)
Falkun, Maltese.

Very rare. Said by Schembri to breed in Gozo; but I have not been able to obtain any confirmation of this fact.

8. Milvus niger. (Black Kite.)
Astun, Maltese.
Very rare.

9. Circus rufus. (Marsh Harrier.)
Bū-ghadam (meaning "the father of bones"—a name given by the Maltese to the different species of this genus, in reference to their great osseous development).

The Marsh Harrier is pretty common in spring and autumn, commencing to appear, in the former season, in March, and in the latter in September. It may then be seen, with the other Harriers, hunting the rocks and fields for quails, lizards, insects, and small birds. Harriers will turn at the sound of a quail-call, and the Maltese sportsmen often use it to draw them within shot.

10. Circus cyaneus. (Hen Harrier.)
Bū-ghadam abiad ("white father of bones"), adult male; *Bū-ghadam,* female and young, Maltese.

Visits us at the same time as the preceding species. A circumstance regarding this bird is worthy of remark. Although I have closely examined as many as thirty females in one season, all exhibiting the white rump, or having it very slightly spotted, I have never met with an adult male.

11. Circus cineraceus. (Montagu's Harrier.)
Bū-ghadam abiad, adult male; *Bū-ghadam,* female and young, Maltese.

Much less common than the other Harriers. Appears at the same seasons.

12. Circus pallidus. (Pale-chested Harrier.)
Bū-ghadam abiad, adult male; *Bū-ghadam,* female and young, Maltese.

This is perhaps the commonest of the Maltese Harriers, and arrives at the same seasons as the others. It is most abundant in April, when it is a conspicuous feature on a spring morning, gliding noiselessly over the open country in quest of insects, lizards, and small birds, the remains of which I have frequently found in its maw. In a large series which I have collected of these birds, the grey bars over the rump are very distinctly marked in the adult males, some of which have the chest and all the under part of the body of a pure white; others have the chest pale grey; while others, again, probably immature males, have the chest marked with more or less fine brown striæ.

13. **Astur nisus.** (Sparrow-Hawk.)
Falkett, Maltese.

Pretty common in spring and autumn, and seen occasionally throughout the summer and winter. It is most frequently met with in October and November.

14. ? **Astur gabar.** (Little Red-billed Hawk.)

This African and rare European bird was said by the late Mr. Hugh Strickland (*vide* Bree, vol. i. p. 52) to have been found in Malta; and I admit it here on his authority.

15. **Astur palumbarius.** (Goshawk.)

According to Schembri, occasionally seen in the summer and autumn months; but I have never met with it myself.

16. **Falco peregrinus.** (Peregrine Falcon.)
Bies, Maltese.

Appears in spring and autumn, and occasionally at other seasons. I have a female which was caught in a net on the 26th December, 1860. A young male in my collection was killed on the 23rd October, 1861, and a female was taken alive on the 1st November of the same year. The Peregrine has been known to breed in precipitous rocks on the south coast of Malta and Gozo. For several years a pair nested and brought up their young in an inaccessible cliff near Casal Zurrico.

17. ? **Falco barbarus,** Linn.
Syn. *F. punicus,* Gen. Levaillant.

A specimen of this interesting bird was, according to 'The Ibis'

(1859, p. 159), shot in Malta by Colonel Drummond-Hay. I wrote to Mr. Tristram, the author of the statement in 'The Ibis,' and he very kindly informed me that Colonel Drummond-Hay fancied the bird shot by him was a small Peregrine; but Mr. Tristram thinks he is mistaken. Under these circumstances, I admit the bird on probation only.

18. Falco subbuteo. (Hobby.)

Bies, Maltese.

Not uncommon in spring and autumn. As is the case with nearly all the birds of passage, the Hobby is much scarcer in some years than in others. In the autumn of 1862 I could not obtain a single specimen.

19. Falco eleonoræ. (Eleonora Falcon.)

Mr. Tristram kindly informs me that a specimen of this rare bird was shot in Malta by Colonel Drummond-Hay, and is in his (Colonel Drummond-Hay's) collection.

20. Falco lithofalco. (Merlin.)

Spagnolett or *Seker,* Maltese.

Not uncommon in spring and autumn, particularly in the latter season, when both old and young appear.

21. Falco vespertinus. (Orange-legged Hobby.)

Spagnolett-ekhal or *Vespertin,* Maltese.

This pretty little Hawk also visits us in the vernal and autumnal periods of migration, and in some years in much larger numbers than in others. It is sometimes to be met with in small flocks, when they will allow repeated shots to be fired at them without taking alarm. In this way I have killed three or four in a few minutes out of a flock of twenty, and might, I dare say, have killed many others. An adult male, belonging to Dr. Leith Adams, was caught in a platform-net, while in the act of stooping at a decoy Yellow Wagtail.

22. Falco tinnunculus. (Kestrel.)

Spagnolett, adult male; *Seker,* female, Maltese.

Common in spring and autumn. Breeds here in the cliffs and fortifications in May, and a few pairs are to be seen all the year.

23. Falco cenchris. (Lesser Kestrel.)

Spagnolett, adult male; *Seker,* female and young, Maltese.

Not uncommon in April and May, and passes sometimes in flocks of nearly a hundred; but is not so often seen as *F. tinnunculus.* I have also obtained it in autumn.

24. Strix psilodactyla. (Sparrow-Owl.)

Kokka, Maltese.

Merely accidental. Specimens obtained in Malta were sent by Signor Schembri to the late Prince Charles Lucien Bonaparte, and determined by that eminent naturalist. But we cannot help thinking that there must have been some confusion here in the nomenclature, and that the specimens were more probably *Athene noctua,* var. *meridionalis.*

25. Strix flammea. (Barn Owl.)

Barbagianni, Maltese.

A few of these birds are to be seen at all seasons, for the most part about the battlements of Valletta and the Three Cities, where they breed in the ruined walls. Fresh arrivals appear to take place in spring and autumn. They are sometimes observed to strike at fish, like an Osprey.

26. Strix brachyotus. (Short-eared Owl.)

Omm-issubien, Maltese.

Very common in spring and autumn, and has been known to breed here. Individuals are taken throughout the winter, when the plumage generally becomes of a lighter hue, mixed with white; in one specimen the under parts were almost pure white.

27. Strix otus. (Long-eared Owl.)

Looking over some skins collected in Malta by Dr. Leith Adams, 22nd Regiment, I observed one of these birds ticketed "Malta, 12th October 1861." He kindly gave it to me, and I have much pleasure in recording this species, I believe for the first time, as a visitor to Malta. There is a specimen in the Malta University Museum, probably taken in this island, but no locality is mentioned.

28. Strix scops. (Scops Owl.)

Kokka, Maltese.

Very plentiful in the seasons of its migrations, and by far the commonest Owl found here. It commences arriving towards the end of February or beginning of March, and continues passing till May, reappearing in September, October, and November. It is sold in the market in great numbers, with Nightjars (*Caprimulgus europæus*) and other birds for the table, and is considered good eating by the natives. It is easily tamed, and becomes very familiar in captivity. A few probably winter here, as individuals are taken in December and January. In 1862–63 I obtained nearly a dozen specimens in the market, at different times in these months.

29. Yunx torquilla. (Wryneck.)

Sultan-issummiem (King of the Quails) or *Bū-lebbiet* (Father of Crouchers), Maltese.

One of the earliest visitors in spring and autumn. Occasionally, but very rarely, met with in winter.

30. Cuculus canorus. (Cuckoo.)

Kuku or *Dakkuka Kahla*, adult; *Sultan-il-gammiem*, young.

Common in spring and autumn. Arrives rather later than the foregoing species, but generally precedes the Doves. Its well-known call is occasionally heard amongst the carob-trees in the valleys, when not molested by the countless sportsmen who infest every ornithological quarter in the island.

31. Cuculus glandarius. (Great Spotted Cuckoo.)

An exceedingly rare species here. I only know of three specimens shot in Malta. One of these was killed at Sliema, in May 1854.

32. Loxia curvirostra. (Crossbill.)

Only an accidental visitor. It has generally been seen in September or October. I have a male which was shot, with another (supposed to be a female), in October 1861; and another obtained in October of this year (1863).

33. Pyrrhula europæa. (Bullfinch.)

This is another very rare bird here. The only cases of its occurrence which have come to my knowledge are two caught in March 1835, another in 1840, and a fourth some years afterwards (Schembri). Its presence may therefore be considered quite accidental.

34. Pyrrhula githaginea. (Vinous Grosbeak.)

Trumbettier, Maltese.

A few of these birds are taken annually, generally from October to March. One was caught in the last week of October 1860, and another in November 1862. It soon becomes very tame in captivity. Its note is like the sound of a penny trumpet, from which it derives its Maltese name.

35. Pyrrhula erythrina. (Scarlet Grosbeak.)

Schembri records the capture of two examples on the 25th December, 1839, under the name of *Fringilla incerta*—a pseudo species, now recognized as the young of *P. erythrina.*

36. Pyrrhula serinus. (Serin Finch.)

Apparell, Maltese.

Very common in October, and stays the winter. Often kept as a cage-bird, and crosses with the Canary. Its joyous song may be heard in places where there are trees. The note is louder than the Siskin's, and more vociferous, as if several individuals were joining in concert.

37. Coccothraustes vulgaris. (Hawfinch.)

Ghasfur-ta-Zebbug, Maltese.

November and December. Pretty common in some years, rare in others.

38. Chlorospiza chloris. (Greenfinch.)

Verdun, Maltese.

Common in flocks in the winter. I have never seen the North-African Greenfinch (*C. aurantiiventris*) in Malta.

39. Passer salicicola. (Spanish Sparrow*.)

Ghasfur-tal-beit, Maltese.

It appears to me doubtful whether the birds known as the Spanish and Italian Sparrows are sufficiently distinct to be considered separate species. The principal difference recognized by authors, and which, according to some, constitutes them distinct species, is the presence in *P. salicicola* of lateral black streaks, which are absent in *P. italicus*. In Malta there are both these varieties; that with streaks, however, is by far the most common, the other being rarely met with. But in a collection of forty or fifty specimens I have found intermediate birds having the streaks more or less visible, so that a series may be formed with gradations so imperceptible that it is quite impossible to draw the line of demarcation. In other respects I can discover no important points of difference, except perhaps in depth of colour,—that with the striæ most distinctly marked being a somewhat more handsome-looking bird. These remarks apply only to the males; in the females I can find no difference whatever. Both kinds breed and associate in the same localities, and in habits are precisely the same, constructing their nests in holes in the house both in town and country, in the walls of the fortifications, and in the rocks on the coast. Now, should these Sparrows be considered *two* distinct species that interbreed and produce a hybrid progeny, or one species subject to variation in the matter of streaks? I think, for all purposes of science they should be considered as one.

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* The specific term *hispaniolensis* given by Temminck to this Sparrow is very objectionable, *Hispaniola* being a term usually applied to the island of St. Domingo, not to Spain. Again, I have never seen this form in Spain, and I do not believe it occurs there. The ordinary Sparrow of Spain is certainly *P. domesticus.* On the other hand, Vieillot's term *salicicola,* used in Bonaparte's Conspectus, combines the two merits of priority and applicability.—Ed.

A large collection of skins of birds obtained by Dr. Leith Adams and myself at different seasons, and from different parts of Malta and Gozo, showing these gradations, was submitted to Sir William Jardine. After carefully comparing them with numerous specimens from various parts of the world, Sir William has kindly given his opinion thereon, which entirely confirms the ideas I had formed on the subject.

Sir William Jardine writes—"All the Sparrows sent to me from Malta are *Pyrgita italica* (Vieill.) 1817, and = *P. salicaria* sive *hispaniolensis*."

I may here mention that, after the breeding-season, the bright chestnut-colour of the head of the Maltese Sparrow becomes sprinkled with a greyish or sand-colour, the deep black of the beak changes to horn-colour with a tinge of yellow about the base, much of the black about the throat and flanks disappears, and the whole plumage is duller.

With reference to the distinctions between this Sparrow

(*Passer salicicola*) and *Passer domesticus* (not found in Malta), Sir William Jardine observes, in the letter above quoted:—

"*Pyrgita domestica,* so far as I have yet seen, is distinct from the above. The females are easily distinguished from each other; and the males in some states, and when viewed in certain positions only, cannot be easily separated. I have placed three specimens before me on their backs, two British and one Maltese, and in that position they appear exactly similar; but when turned with the back uppermost, you never find in *P. domestica* the base of the feathers of the centre of the crown of the deep chestnut of the Maltese species, although that part in the latter may be almost as grey from the long tips of the feathers covering the chestnut. The deep-chestnut head and dashes of black on the breast and flanks indicate the breeding-state. In winter specimens (Nov.), the crown, &c., appears nearly grey until the feathers are separated, when the chestnut appears. The Malta Sparrow is equal to that of the South of Europe, and seems to represent that of North Europe—our *P. domestica,* and has as good claims to be a species as nine-tenths of the birds that are acknowledged. It does not appear you have *P. domestica* at all in Malta, and of course there can be no interbreeding."

I must observe, however, that *Passer domesticus* is, notwithstanding, a common bird further south than Malta, as I have seen several specimens killed by Dr. Leith Adams, and others by Mr. S. Stafford Allen, in Egypt, and Capt. Loche includes it in his Birds of Algeria. Mr. Medlycott writes to me from Gibraltar that he found it there, and did not see *P. salicicola.*

40. Passer montanus. (Tree Sparrow.)

I know of only one specimen having been taken, many years ago, and which is now in the collection of Signor Schembri. He begs me to correct an error he fell into, in saying that this species bred in Malta.

41. Passer petronia. (Rock Sparrow.)

It is only at long intervals of time that a bird of this species is met with here. I obtained one, which was taken alive on the 23rd November, 1862; it died after about a month's confinement.

42. **Fringilla cælebs.** (Chaffinch.)

Spunsun, Maltese.

Flocks of Chaffinches arrive in October, and a good many stay the winter. On the approach of spring, all disappear. I have never met with the Algerian form, *F. spodiogenia.*

43. **Fringilla montifringilla.** (Bramble Finch.)

Spunsun selvag, Maltese.

Rather rare; but a few are taken nearly every year, in October and November.

44. **Carduelis elegans.** (Goldfinch.)

Gardil, Maltese.

Not very common. Arrives in October, and again in April and May. A few are to be found in the winter months. Has been known to breed here. Numbers of young birds are imported from Sicily in August.

45. **Carduelis spinus.** (Siskin.)

Ecora, Maltese.

This bird also makes its appearance in October and November, and a few specimens are taken every year. In some years they are much more plentiful than in others. It is often crossed with the Canary by the native bird-fanciers.

46. **Cannabina linota.** (Linnet.)

Gioin, or *Gioin tal warda* or *tal warda bianca,* Maltese.

Very common from October till March. Most of them depart before the males assume the crimson breast and forehead of the nuptial plumage; but a few remain to breed.

47. **Emberiza cirlus.** (Cirl Bunting.)

I have what appears to be a female of this species, taken on the 12th November, 1862. Signor Schembri possesses a male, which was captured on the 20th November, 1839.

48. **Emberiza cia.** (Meadow Bunting.)

Kanal salvag, Maltese.

This is also a very rare bird. It visits the island occasionally, in the fall of the year and in winter. One was taken alive in January 1863, and appeared very lively in captivity, taking hemp and other seeds readily. It lived till the following August, when, like most pets, it came to an untimely end.

49. Emberiza hortulana. (Ortolan Bunting.)
Ortulan, Maltese.

Not uncommon in some years. It appears in spring and autumn—in March and April in the former, and in September and October in the latter season. It is fond of bathing itself in pools formed by the rain in the rocks.

50. Emberiza schœniclus. (Reed Bunting.)

This is another of the Buntings, which only at long and irregular intervals favours us with a visit. I obtained one on the 13th November, 1860, andanother on the 14th November, 1861.

51. Emberiza miliaria. (Common Bunting.)
Duraisa, Maltese.

This well-known bird is more or less common during the greater part of the year. It is especially abundant in the breeding-season, in March, April, and May, when its nest is one of the commonest of the few found here.

52. Emberiza nivalis. (Snow Bunting.)

Schembri mentions two individuals having been taken alive, in the autumn of 1840, by a man netting for Larks.

53. Regulus cristatus. (Golden-crested Regulus.)
Ziemel, Maltese.

54. Regulus ignicapillus. (Fire-crested Regulus.)
Ziemel, Maltese.

Both these species have been taken in the winter months; and I have a specimen of the Fire-crested Regulus which was shot by Mr. J. Horne on the 5th November, 1860. They both appear to be somewhat rare, although no doubt they often escape detection.

55. Corvus frugilegus. (Rook.)
Corvu or *Ciaulun,* Maltese.

A bird of passage in October and November, when it generally appears in small flocks. In the winters of 1861–62 and 1862–63 it was very common, and remained on the island several months, associating with Jackdaws and Starlings. This year I observed it till the beginning of April, when it disappeared, probably having taken its departure northward to breed.

56. CORVUS MONEDULA. (Jackdaw.)
Ciaula or *Kola,* Maltese.

One of our resident birds, and is to be seen at all seasons all over the island, being most plentiful on the south and south-western parts, where the rugged cliffs afford it excellent and secure places for nidification. It has very much increased in numbers of late years. Formerly it was a rare thing to see a Jackdaw within a mile of the town; now it breeds freely in the fortifications of Valletta, in company with a number of semi-wild Pigeons, and may sometimes be seen resting on the tops of the houses in the middle of the town. It is asserted somewhere that the Jackdaw is an importation of the Knights of St. John; but this appears to be rather apocryphal. I have never seen *Corvus daüricus* of authors in Malta.

57. PICA CAUDATA. (Magpie.)
Ciaula baida, Maltese.

Schembri informs us that one of these birds was shot on the 7th October, 1839, probably a straggler blown off the southern coast of Sicily, where it exists in great numbers.

58. STURNUS VULGARIS. (Starling.)
Sturnell, Maltese.

Common in September and October, and stays the winter.

59. STURNUS UNICOLOR. (Sardinian Starling.)

Schembri includes this species, from two specimens shot out of a flock of five or six many years ago.

60. PASTOR ROSEUS. (Rose-coloured Pastor.)

This elegant species is rare here, and visits us very irregularly. Examples have been taken in spring, autumn, and winter. A specimen was killed on the 7th August, 1855, at Citta Vecchia, the old capital of the island; and since then three or four others have been obtained—three of them at the Marsa, at the head of the Grand Harbour. The fourth was a bird of the year, which I purchased in the market in the first week of November 1858. Since then I have not seen any others.

61. Hirundo rustica. (Common Swallow.)
Huttafa or *Hauiefa,* Maltese.

Arrives in great numbers early in March, and may be seen in town and country till May. At the end of August, on its return southward, it again makes its appearance, and is plentifully spread over the island till October. Specimens of the variety *H. rustica orientalis* have also been taken.

62. Hirundo daürica (Linn.). (Rufous Swallow.)
Syn. *Hirundo rufula,* Temminck.

This species appears to be the Common Swallow of Palestine and Greece; and as it is an occasional visitor in Algeria, Sicily, Italy, and south of France, I was long of opinion it would turn up in Malta; but it was not until the 5th April, 1862, that I had the pleasure of seeing it. Out shooting with Dr. Leith Adams, at the Salini, we distinctly recognized three individuals, of which Dr. Adams succeeded in shooting one. We noticed at the same time *H. rustica* and *H. riparia,* of which I shot two or three. A strong easterly wind was blowing; indeed, easterly winds had prevailed for some days, to which probably was owing the presence of *H. daürica* so far to the westward of its usual habitat. A day or two subsequently, Dr. Adams obtained another specimen from the same place, and saw several others. There are two specimens in the Malta University, evidently taken many years ago, but no locality or time is given.

63. Hirundo urbica. (House Martin.)
Huttafa or *Hauiefa,* Maltese.

The Martin is as common here as the Chimney Swallow, and is to be seen at the same seasons. It is perhaps even more plentiful in the towns and fortifications. It also remains with us part of the winter, when *H. rustica* has departed.

64. Hirundo riparia. (Sand Martin.)
Huttafa or *Hauiefa,* Maltese.

Also common in spring and autumn, but arrives a little later. The first I saw in 1862 was on the 5th April.

65. Hirundo rupestris. (Rock Swallow.)
Huttafa or *Hauiefa,* Maltese.

Schembri says it is rather common both in its April and September migrations. It can hardly be very common, as, although I have looked out pretty closely for it, I have never met with a single one.

66. Cypselus apus. (Swift.)
Rundun, Maltese.

Commences arriving from the south in March and April, and remains with us till August, breeding in the precipitous rocks and caverns on the coast and in the walls of the fortifications. Repasses in September. In spring and summer it is plentifully distributed all over the island, but disappears as autumn advances.

67. Cypselus melba. (White-bellied Swift.)
Rundun ta Zaccu baida, Maltese.

Much less common than its congener. A few are annually seen in spring and autumn; but it makes no lengthened stay, and does not breed here. Mr. Tristram and Mr. Medlycott found it breeding in the island of Sardinia in May, in company with the Lesser Kestrel (*Falco cenchris*).

68. Caprimulgus europæus. (Nightjar.)
Bukraik or *Bukarak*, Maltese.

Plentiful towards the end of March and in April and May. Great numbers are shot in these months for the table. As many as one hundred and thirty have been shot in a day by one gun. In spring they are most abundant in south-westerly winds after a dark night. They are generally found asleep in the daytime on the branches of the carob-trees, invariably arranging their bodies and long tails in a line with the branches. Thus, being of the same colour as the bark, they are very difficult to perceive. They are also found reposing on stones and on open rocky ground. In Gozo the country-people have a way of snaring them with a noose at the end of a stick. I have often seen these birds before sunrise, and again in the evening after sunset, hunting for insects on the wing. They repass in September and October, at the same time as the Scops Owl.

69. Caprimulgus ruficollis. (Rufous-necked Goatsucker.)

A specimen of this bird was shot at Imtahlep, on the south-west of Malta, at the end of May 1860. The preserved skin fell into my possession a few days afterwards. This is the only instance of this species having been obtained in this island.

70. Muscicapa grisola. (Spotted Flycatcher.)
Zanzarel, Maltese.

Very common in spring and autumn, and arrives later than its congeners. It is one of the last to leave us in the spring.

71. Muscicapa atricapilla. (Pied Flycatcher.)
Zanzarel, Maltese.

Another of our spring and autumn visitors. Although often seen in the valleys and by roadsides in the neighbourhood of trees, it is not so numerous as *M. grisola.*

72. Muscicapa albicollis. (White-necked Flycatcher.)
Zanzarel, Maltese.

This non-British species arrives and departs about the same time as *M. atricapilla,* but is less common. Schembri, in his Catalogue, has confounded these two birds, as only *M. albicollis* is given, to which is attached the English name of "Pied Flycatcher."

73. Lanius excubitor. (Grey Shrike.)

74. Lanius meridionalis. (Great Grey Shrike.)

75. Lanius minor. (Lesser Grey Shrike.)

Merely accidental visitors. Of the first, *L. excubitor,* one specimen is recorded by Schembri. Of the second, *L. meridionalis,* several specimens have been taken. I have two in my possession—one of them a female, in the plumage of the adult male, killed on the 12th February, 1861. Of *Lanius minor* I know of no examples except those mentioned by Schembri, taken upwards of twenty years ago, one of which he has still in his possession.

76. Lanius rufus. (Woodchat Shrike.)
Cacciamendula or *Būghiddiem* (Father of Biters), Maltese.

The Common Shrike of Malta, and may be seen during a great part of the year. Perched on the uppermost twig of some tree, its shining white breast forms one of the most conspicuous objects in the ornithological landscape in April. On the first appearance of danger it flies off to another and more distant tree, and taking up a similarly elevated position, scans the country round till the danger which had excited its alarm has passed away. It breeds here in May and June, constructing a compact and well-formed nest in the fork of a carob or almond tree. Its affection for, and the courage it displays in the protection of, its young are remarkable. Wary as it is at other times, on these occasions it seems to lose all fear; uttering piercing cries, it will fly close round the head of the intruder, and actually make a feint of dashing in his face. In September fresh arrivals take place, but all disappear before winter. In autumn those taken are generally birds of the year.

77. ALAUDA ARVENSIS. (Skylark.)

Aluet, Maltese.

Abundant in flocks in October, when great numbers are taken in nets and shot. A few remain the winter, till the beginning of February. It repasses in March and April, but in less numbers than in autumn. I have not heard it sing here. My collection contains a curious cream-coloured variety of this species, with ashy markings on the back and wings.

78. ALAUDA CRISTATA. (Crested Lark.)

Rare; in March and October a few are sometimes taken.

79. ALAUDA ARBOREA. (Wood Lark.)

Ciuklaita (Rattle), Maltese.

Rather less rare than the preceding species, but it cannot be considered common. Appears at the same seasons. I have also seen it exhibited for sale with Skylarks.

80. ALAUDA BRACHYDACTYLA. (Short-toed Lark.)

Bilbla, Maltese.

This is one of the most characteristic birds of Malta in spring, and does duty amongst English residents as the Skylark, with which it has some habits in common. In the breeding-season, from April to June, it is abundantly spread in pairs all over the island, and the song of the male is then constantly heard encouraging its mate in the labours of incubation. Its mode of ascending in the air is different from that of the Skylark, consisting of a succession of jerks, which may be peculiar to the species. It delights in the wastes and desert tracts of the island. At the commencement of autumn it gathers together in flocks, which appear to be joined by numerous fresh comers from the north; but all speed away long before the winter sets in.

81. ALAUDA LUSITANICA (Gmel.). (Cream-coloured Lark.)

The capture of a single specimen, of which the skin is in the possession of Signor Schembri, entitles it to a place in this catalogue.

82. ALAUDA CALANDRA. (Calandra Lark.)

Calandra, Maltese.

An annual visitor in March and October, and a few may not unfrequently be detected by their larger size amongst flocks of Skylarks. It cannot, however, be said to be very common. Numbers are yearly imported from Sicily, and kept as cage-birds for their song, which is too powerful for a room. A good songster is much esteemed, and fetches a high price.

83. ANTHUS RICHARDI. (Richard's Pipit.)

Bilblun selvag, Maltese.

Accidental. In the spring of 1853 I was so lucky as to shoot one of two which appeared on Fort Manoel Island. My attention was attracted by its exceedingly sharp and powerful note. Another is recorded as having been taken in October.

84. ANTHUS CAMPESTRIS. (Tawny Pipit.)

Bilblun, Maltese.

Common from March to May, and again in the autumn. I have never seen it in winter.

85. ANTHUS PRATENSIS. (Meadow Pipit.)

Pespus tal giargir, Maltese.

Exceedingly plentiful in October and November, and commences arriving when the Short-toed Larks disappear. A good many stay the winter. Passes again in March.

86. ANTHUS CERVINUS. (Red-throated Pipit.)

That no notice has been taken of this species as a visitor to Malta is probably owing to its having been considered only a variety. The first specimen that fell into my hands was shot on the 7th April, 1860, by Signor Pace, who kindly gave it to me.

Since then I have seen and shot many individuals. This has generally been in April, but I have also observed it in autumn. Arrives in small flocks. It is interesting to notice the gradation in depth of colour of the throat that a series of these birds presents, sliding into the plumage of *A. pratensis*.

87. Anthus arboreus. (Tree Pipit.)

Tis, Maltese.

Very common; arrives in small flocks in spring and autumn, which soon get dispersed over the country. It departs in May, to return in September and October, a few passing the whole or part of the winter with us.

88. Anthus spinoletta (Linn.). (Water Pipit.)

I have only seen one specimen, which I shot by the sea-side, on Fort Manoel Island, on the 5th November, 1860.

89. Motacilla alba (Linn.). (White Wagtail.)

Zic-zak or *Zakak*, Maltese.

Common in autumn, and stays the winter; is seen generally in small flocks, or solitary, by the sides of pools and in newly ploughed fields. Leaves early in spring, and is rarely observed in the breeding-plumage. *M. yarrelli* of Gould was, I believe, erroneously stated to have been found here.

90. Motacilla boarula. (Grey Wagtail.)

Zakak ta del (Zakak of shady places), Maltese.

Arrives about the middle of September, and is common in October, a few remaining till March. Always solitary or in couples, it is very partial to shady spots by the side of running water and the sea-shore. Breeds here in April.

91. Motacilla flava, Linn. (Yellow Wagtail.)

Kappamosk or *Garnell*, Maltese.

Commences arriving in flocks about the middle of March, and is seen again in September, associated in both seasons with *Motacilla cinereocapilla*, Bp. (Grey-headed Yellow Wagtail), which is not quite so plentiful. Again, in the same flocks with these may be found *M. melanocephala*, Bp. (Black-headed Yellow Wagtail), which is the rarest. The Maltese bird-catchers call the last *Obrosk*, from a real or fancied grating peculiarity in its note, both in spring and autumn, which they consider different from that of *M. flava* and *M. cinereocapilla*. If this be true, it is rather an important fact in favour of its being a distinct species. They are all caught in nets during their migrations, and are frequently kept in shops and houses for killing flies.

92. ORIOLUS GALBULA. (Golden Oriole.)

Taira safra (Yellow Bird), adult; *Taira hadra* (Green Bird), female and young, Maltese.

This strikingly beautiful bird is a regular visitor in spring, and arrives in small flocks. It would probably breed here, if not disturbed. It is very common sometimes in Sant' Antonio Gardens, and is very destructive to the fruit of the Japan Medlars (*Mespilus japonica*), of which it appears to be exceedingly fond. Occasionally, adult females, probably old birds, are found in the brilliant plumage of the males. A few also pass in September.

93. TURDUS·MERULA. (Blackbird.)

Malvitz isued (Black Thrush), Maltese.

Arrives annually in October and November. A few remain the winter, individuals having been taken in December, January, February, and even in March. Leaves in spring.

94. TURDUS TORQUATUS. (Ring Ouzel.)

Malvitz tas-sidra baida (White-chested Thrush), Maltese.

Arrives about the same time as the other Thrushes, but it is one of the rarest. Nevertheless a winter seldom passes without some being taken.

95. TURDUS MUSICUS. (Song Thrush.)

Malvitz, Maltese.

Very abundant in October and November, and a few continue to be seen till December. It repasses in March.

96. TURDUS VISCIVORUS. (Missel Thrush.)

Malvitzun (Large Thrush).

A specimen was obtained by me on the 1st February, 1861, and another by Mr. J. Horne on the 2nd December the same year. I obtained a third in the winter of 1862, and two others in the autumn of this year (1863).

97. Turdus pilaris. (Fieldfare.)

Malvitzun, Maltese.

The latest of the Thrushes which visit us in the winter. It is seldom seen before January, when a few are taken every year. It generally lingers in the island a few weeks.

98. Turdus iliacus. (Redwing.)

Malvitz, Maltese.

Rare; does not make its appearance every year. In November and December 1861 I obtained two specimens, and Mr. J. Horne another on the 2nd of the latter month.

99. Petrocincla saxatilis. (Rock Thrush.)

Gianbublu, Maltese.

Arrives early in spring (about the middle of March), generally in pairs, and may be seen till May. It reappears in September, on its voyage southwards.

100. Petrocincla cyanea. (Blue Solitary Thrush.)

Meril or *Ciccu di Diu,* Maltese.

Indigenous. A lover of rocky and solitary places, it not unfrequently approaches the dwellings of man; and it is no uncommon occurrence to see it perched on the corner of some house, giving vent to its melodious but plaintive song, which it also often pours forth on the wing. It is most commonly met with in pairs on the south coast, where it breeds in the high cliffs. It also constructs a loosely formed nest in ruined buildings, in which case its progeny are sure to be taken by the country-lads, who find a ready sale for them in the town as cage-birds. The Blue Thrush becomes strongly attached to the locality in which it has been brought up, and seldom quits it. This affection is also shown in a state of captivity, and it rarely long survives removal to a new and strange place. Many instances of this kind have come under my notice. One is worth mentioning. When the New Market in Valletta was opened, many of the market-people brought with them cages containing these birds from the old market, where they had been reared. One after another of the birds pined away and died, and in a few weeks not one survived the change of locality, yet they were fed by the same hand, and with the same description of food. Almost fabulous prices are sometimes given for a good songster. An instance is fresh in my memory of a noble lady who considered herself fortunate in securing one for £7 10*s*., as the owner was very loth to part with it; and two or three pounds is not an unusual price. The male nestlings may easily be distinguished from the females at a very early age by their blue wing-coverts. In confinement they are much subject to a disease of the feet, which generally proves fatal. The Maltese suspend a piece of red cloth and a cowry-shell in its cage, which they consider a certain specific against the "evil eye."

101. SAXICOLA ŒNANTHE. (Wheatear.)

Kuda bianca, Maltese.

Abundantly spread over the island in spring and autumn. In the former season it commences to appear in March, and in the latter in August.

102. SAXICOLA STAPAZINA. (Russet Wheatear.)

Dumnikan, Maltese.

Comparatively scarce; but a regular annual visitor in spring and autumn. It arrives at the same time as the preceding species, or perhaps a little later. It sometimes perches on the branches of trees—a habit I have never observed in *Saxicola œnanthe.*

103. SAXICOLA AURITA. (Eared Wheatear.)

Dumnikan, Maltese.

This bird first came under my notice as a visitor to Malta in 1859. I shot one, in the spring of that year, in St. Julian's Valley. Since then I have met with it annually in spring and autumn, although never in any great numbers. It arrives and departs about the same time as the other Wheatears.

104. SAXICOLA RUBETRA. (Whinchat.)

Buciak tal Kudi, Maltese.

Arrives at the same time as the other *Saxicolæ*. In April and May, and again in September, it may be met with almost daily in the fields and open places.

105. SAXICOLA RUBICOLA. (Stonechat.)

Buciak, Maltese.

Also arrives in spring and autumn, but is rather more common than the Whinchat. The Stonechat passes the winter with us, which none of its congeners do. Indeed, one can scarcely move about anywhere in the country in winter without seeing his lively little figure. This difference of habit in migration has also been noticed in England and Scotland, where the Stonechat remains the winter, unlike the Whinchat, which invariably travels south before the inclement season begins.

106. Philomela luscinia. (Nightingale.)
Rosignol, Maltese.

The Nightingale visits us in flocks in April and May, and again towards the middle of August and September. It is, in fact, one of the first arrivals in autumn. In spring I have often listened to its thrilling notes, both in the daytime and at night, the songster himself hidden in the dark foliage of the carob-tree. It is, however, more appreciated here for the delicacy of its flesh than the quality of its song. Attempts have been made to keep it in confinement; but it bears captivity ill, and those taken in spring rarely long survive the loss of liberty. Great numbers are taken in nets, which are thrown over a low spreading carob-tree selected for the purpose, and the birds driven from other trees into it,—a mode of capture very successfully adopted for most of the Warblers and other small birds, which are sold in the market under the general name of *beccafichi.*

107. Ruticilla phœnicura. (Redstart.)
Kudiross or *Ta dembu,* Maltese.

Common in spring and autumn, and stays here several weeks during its migrations.

108. Ruticilla tithys. (Black Redstart.)
Kudiross isued, Maltese.

In spring and autumn, but not so common as the preceding. I have occasionally seen it when the winter was far advanced.

109. Erithacus rubecula. (Robin.)
Pettiross, Maltese.

The Redbreast is one of our winter residents, arriving at the end of September, and staying till March. Here, as at home, he affects the habitations of man; but not being driven by want, as in cold climates, he is not so familiar. He is most commonly met with in gardens, and may not unfrequently be heard singing merrily from some housetop, either in town or country.

110. CYANECULA SUECICA. (Blue-throated Warbler.)

Very rare; only now and then seen. The two or three I have examined had the pectoral spot very light rufous, or pure white.

111. ACCENTOR MODULARIS. (Hedge Accentor.)

Rather rare. I met with it on the 26th November, 1860, and on the 3rd December, same year; and Dr. Adams observed two or three others, of which he obtained one. I have another, which was taken in May 1862. Individuals have also been captured in December and January.

112. SYLVIA ATRICAPILLA. (Blackcap.)

Not common; has been observed in January, February, and March, as well as in September and October. I shot two males in February 1859, and a female the following March. Two were taken in October 1858, and one or two others in October 1860. One was obtained in Gozo in January 1861, and two or three more were seen at the same time. I purchased two in the market in the last week of September 1862, and have since obtained two or three others.

113. SYLVIA HORTENSIS. (Garden Warbler.)

Beccafik, Maltese.

In April and the middle of August and September, flocks of Garden Warblers visit us on passage; and numbers are netted and brought to market, where they are eagerly sought after for the table; as many as a hundred dozen are sometimes brought in at a time. It is the far-famed *beccafico* of the Italians.

114. SYLVIA CURRUCA. (Lesser Whitethroat.)

The capture of a single specimen is recorded in Schembri's Catalogue. Inhabiting the north coast of Africa, as well as Europe, its appearance in Malta is to be expected; but I have never met with one myself.

115. SYLVIA ORPHEA. (Orphean Warbler.)

Appears to be rare; I have only seen a single specimen—one sent in 1858 to Sir W. Jardine by his son, who was serving in one of Her Majesty's ships on this station. Schembri states that a few pass yearly, in March, September, and October. A recent writer on Malta (Tallack) says it is common in the Soldiers' Cemetery at Floriana; but I believe this statement arose from a misunderstanding, and that the Sardinian Warbler (*S. melanocephala*) was meant.

116. SYLVIA CINEREA. (Whitethroat.)

One of the commonest of the *Sylviidæ* in spring and autumn.

117. SYLVIA PASSERINA. (Subalpine Warbler.)

This pretty species is a regular visitant in spring and autumn. It is not uncommon in March, April, and September. It varies much in size.

118. SYLVIA CONSPICILLATA. (Spectacled Warbler.)

Ghasfur-el-harrub or *Ghasfur tal Gamiem*, Maltese.

The only one of the Warblers that is a constant resident. It is partial to dry stony places, and selects for its nest low coarse under-shrubs, such as *Inula viscosa* and *Euphorbia dendroides*, which flourish in wild rocky situations. During the time of nidification its vigorous and pleasing song is heard for a considerable distance around, delivered from the topmost branch of a tree, or the apex of a stone, in the vicinity of its nest, over which it sometimes hovers and sings in the manner of the Blue Thrush. It has another note, somewhat like that of the *S. melanocephala*, but less powerful. It is an early breeder, laying four or five eggs, and, I should think, produces two broods in the season, as I have found nests with young in May and June as well as in March. In fine weather it commences singing as early as January. It appears very excited on any one approaching its nest, from which it never wanders far. A favourite place for it is the Soldiers' Cemetery at Floriana, before alluded to, where a search for it will seldom prove unsuccessful. It delights in flitting from tombstone to tombstone, or amongst the under-shrubs and few trees to be found there. It will allow itself to be watched very closely, and reward the observer with strains of music, which, if not of a high order, strike pleasantly on the ear in an island not much favoured by the song of birds. One of these birds, fed on bread and milk, throve and sang in confinement.

119. SYLVIA MELANOCEPHALA. (Sardinian Warbler.)
Būsueida, Maltese (in allusion to its black head).

This is another strikingly pretty little Warbler, which visits Malta from southern Europe and northern Africa. It generally appears in the winter months, which has given rise to another local name by which it is also known, *Ghasfur tal Maltemp,* or the "Bird of Bad Weather." It is never very numerous, and in some years is not often met with. The locality mentioned as a good one for the last two species is also a favourite resort of the Sardinian Warbler. When disturbed, it flits along the ground in a slinking manner to the nearest bush, into which it enters so rapidly that it is difficult to catch more than a glimpse of its outspread tail before it disappears from view; and if the bush furnishes a good hiding-place, it will not readily move out again. Its characteristic note is powerful and harsh, resembling the winding of a clock; it has also another note, "*chuck-chuck-chuck.*" It is not unfrequently seen amongst thickets of cactus (*Cactus opuntia*), with which this island abounds; and it is also partial to gardens. I have never known it breed here.

120. SYLVIA PROVINCIALIS. (Dartford Warbler.)
Included in Schembri's Catalogue from the capture of a single specimen. Is found in North Africa.

121. PHYLLOPNEUSTE TROCHILUS. (Willow Warbler.)
Bū-fula, Maltese.

A bird of passage in March, April, September, and October. It does not appear to be very common; but in the above seasons I have obtained several specimens—in the latter chiefly the young of the year.

122. PHYLLOPNEUSTE RUFA. (Chiffchaff.)
Bū-fula, Maltese. (Father of a Bean.)

Arriving in autumn, after passing the summer in Europe, the Chiffchaff remains with us all the winter. During that season until spring, when it is joined by new-comers, it is one of the most familiar birds, being generally spread over the country, in gardens, orange-groves, and places where the carob and other trees afford it shelter and insect food. Careful measurement of numerous specimens taken by myself and sent to me by friends, has shown that the Chiffchaffs found in Malta are generally somewhat smaller than the dimensions, given by authors, of those from northern Europe. Sir William Jardine has also noticed this peculiarity in examples sent to him by Dr. Adams and myself. In other respects they are precisely similar. Half a dozen examples now before me, measured in the flesh, did not exceed 11 centimetres in length; and upwards of a dozen kindly lent me for examination by Dr. Adams were all of the same diminutive size.

123. PHYLLOPNEUSTE SYLVICOLA. (Wood Warbler.)
Bū-fula, Maltese.

Common in spring and autumn. It especially affects fig- and almond-trees when in leaf, the colour of whose foliage mostly assimilates to its own plumage, and renders it not easy of detection when at rest. It is also found in the olive- and carob-trees. I cannot confirm Schembri's statement that it passes the winter in Malta, though I have seen it late in autumn. In this I am supported by Dr. Adams's observations.

124. PHYLLOPNEUSTE BONELLII. (Bonelli's Warbler.)
Bū-fula, Maltese.

A bird of passage in spring and autumn. It is very liable to be confounded with *P. trochilus,* which it much resembles in general appearance, especially in the young birds of autumn, which have more yellow about the under parts than the examples taken in spring. There can be no doubt, however, of their being different species. The eggs, I am informed, are widely different—totally unlike. *A propos* of eggs as indicative of specific distinction and of generic relation, Mr. W. C. P. Medlycott writes to me that he went over several drawers of Mr. Tristram's extensive collection with him, and in many, indeed almost all cases where *Sylviæ* were most closely allied in the external characters of form and colour of plumage, the difference between their eggs was most plainly marked. Thus in the present instance in *P. bonellii* the eggs are white, thickly spotted with dark chestnut (closely resembling those of *P. sylvicola*), while in *P. trochilus* they are much more sparsely spotted with very light chestnut. Again, specific approximation may frequently be traced by the eggs, as in the case of *Cettia cetti*, where its singular eggs seem to mark its affinity to the Indian genus *Prinia*.

In all the Maltese specimens I have examined, I have found the length of the wing, from the carpus to the end of the longest primary, to be about 5 millimetres longer in *P. trochilus* than in *P. bonellii*. There is also a slight difference in the relative length of the wing-feathers.

125. Hippolais icterina (Gerbe, Rev. Zool. 1844, p. 440, and 1846, p. 433; and Dict. d'Hist. Nat. 1848, xi. p. 237). (Vieillot's Willow Warbler.)

This species, which has been so often confounded with its congener, *H. polyglotta*, is a regular visitor in April, May, September, and October. Although never very numerous, it is far from being rare. I have frequently met with it on the sheltered sides of hills, among fig-trees, and obtained a good many specimens at different times. Owing to its restless disposition, which induces it to be constantly on the move, it is not easy to shoot; yet it is not shy. Schembri, in his 'Catalogue of Maltese Birds,' gives *H. polyglotta*, which I have never seen here, instead of *H. icterina*. There is no reason why that species should not also be observed in Malta; but it appears to me that he has probably mistaken *H. icterina* for it, as the Prince of Canino, who examined most of his specimens, has figured *H. icterina*, in the 'Fauna Italica,' as *H. polyglotta*, and M. De Selys Longchamps made a similar mistake in the 'Faune Belge,' in 1842. M. Gerbe has since so clearly indicated the essential points of difference, that one would think these birds could scarcely be again confounded. *H. icterina* is found in Algeria and other parts of Barbary. I have examined many specimens of it shot by myself, and others sent me by Dr. L. Adams, and they all agree with M. Gerbe's diagnosis in having the first primary longer than the fourth, and nearly equal to the third, the second longest, and the wings in repose reaching to about the middle of the tail. According to M. Gerbe, the wing in *H. polyglotta* does not reach halfway to the tail, and the first primary is equal, or nearly equal, to the fifth. Dr. Adams tells me that he has seen this bird in May, hunting for flies on the wing, like the true Flycatchers (*Muscicapidæ*), and that its call-note is a harsh creak; but that he had never met with *H. polyglotta.*

126. Aëdon rubiginosa. (Rufous Sedge Warbler.)

Rare; does not occur annually. It has most often been observed in September. One taken in that month in 1857 lived for some time in captivity.

127. Calamoherpe turdoïdes. (Great Sedge Warbler.)

Baghal (Mule), Maltese.

Not common; but a few are taken every year, in spring and autumn.

128. Calamoherpe arundinacea. (Reed Warbler.)

Generally seen in September and October. Mr. J. Horne shot one in the last week of August 1860. Not common.

129. Cettia luscinoïdes. (Savi's Warbler.)

Schembri notices a single specimen, captured in November 1842.

130. Cettia melanopogon. (Moustached Warbler.)

A single example, shot by Dr. L. Adams on the 11th November, 1860, at the Marsa. This specimen is in the possession of Sir William Jardine.

131. Calomodyta phragmitis. (Sedge Warbler.)

Not uncommon in April, May, September, and October; but not seen in any great numbers.

132. Locustella fluviatilis. (River Warbler.)

One specimen noticed by Schembri.

133. Upupa epops. (Hoopoe.)

Dakkuka tal pennac, Maltese.

Very common, and a regular visitor in spring and autumn. In both seasons it is one of the earliest arrivals. I have seen it as early as the middle of February and the middle of August. It is said to breed in great numbers in Tripoli.

134. Coracias garrula. (Roller.)

Karnaclic or *Farrug,* Maltese.

Appears annually in spring and autumn, sometimes in small flocks of five or six. It is common in April and May, a few lingering till June. An instance is recorded of a pair breeding in a ruined house in an unfrequented part of the country. This bird is often called the "Jay," or "Blue Jay," by English residents and visitors; and it is probably owing to some such mistake that Yarrell and other authors have given Malta as a locality of *Garrulus glandarius* (Linn.), which is never seen here.

135. Merops apiaster. (Bee-eater.)

Kirt-el-nahal, Maltese.

In April and May it arrives in large flocks, and its peculiar gurgling note may be heard at a long distance. Towards evening they settle to roost on the carob-trees, and nestle so close to one another that I have known as many as twenty or thirty to be brought down at one shot. Three were seen in 1861 as late as the 7th June. In Gozo they have been observed to lay their eggs in the sand. They reappear in autumn.

136. Merops persicus. (Blue-cheeked Bee-eater.)

One example, killed in September 1840, noticed by Schembri.

137. Alcedo ispida. (Kingfisher.)

Ghasfur ta San Martin, Maltese.

An annual visitor; generally seen about the sea-shore in pairs. Arrives in August and September, and occasionally observed in the winter months. One was killed on the 14th March, 1862. Said to breed here sometimes.

[To be continued.]

IV.—*Five Months in the West Indies.*

By E. Cavendish Taylor, M.A., F.Z.S.

Part I.—*Trinidad and Venezuela.*

Having determined to spend the winter of 1862–63 in the West Indies, I left England the 2nd December, and went to Trinidad, *viâ* St. Thomas, where I remained from December 22nd till March 24th. During that time I made two separate excursions on the mainland of South America, each of which occupied a fortnight. The first was by steamboat 300 miles up the Orinoco, to the important town of Ciudad Bolivar, or Angostura as it was formerly called. The second was also by steamboat down the coast of Venezuela to La Guaira, the port of Caracas, the capital of that republic; whence I rode up to Caracas, and stayed there a few days. *En route* both to and from La Guaira, we touched at the ports of Carapano, Pampator (in the island of Margarita), Cumana, and Barcelona, staying at each a sufficient time to enable me to go ashore and make a brief investigation of the birds to be seen in those localities. After finally taking my departure from Trinidad on March 24th, I visited the islands of Martinique, Dominica, and Porto Rico, staying a fortnight in each. In all, I spent five months in the West Indies, during the whole of which time I devoted myself pretty steadily to bird-collecting and the study of West Indian ornithology. The result of my labours I now propose to lay before the readers of 'The Ibis' in two articles, the first devoted to Trinidad and the main, the second to the islands of Martinique, Dominica, and Porto Rico.

Trinidad is a large island, its average length being 50 miles, its average breadth 35 miles, and its area over 2000 square miles. It is the most southern of the British West Indian Islands. It lies between 10° and 11° of N. lat., and 61° and 62° of W. long. On the west it is separated from the mainland of Venezuela by the shallow lagoon called the Gulf of Paria; on the south it is divided by a comparatively narrow channel of deeper water from the vast swamps of the Orinoco delta; on the east and north it is bounded by the open sea. In its general appearance Trinidad bears no resemblance whatever to the volcanic islands of the lesser Antilles; it seems rather a detached portion of the adjacent continent. Its general surface is pretty level, with a range of mountains along the north coast which attain a maximum elevation of 3000 feet, a much lower range of hills along the south coast, and a boss of low hills in the centre of the island. The north-coast range corresponds with the chain of mountains extending along the north coast of Venezuela, which terminates in the lofty point called La Peña, exactly opposite the north-west promontory of Trinidad, and distant from it about fifteen miles. The channel between these points is divided by three small rocky islands, called Monos, Huevos, and Chacachacave, into four channels or *bocas*, which form the northern entrance to the Gulf of Paria, and are collectively called the Boca del Drago, or the Dragon's Mouth. The range of hills on the south coast of Trinidad has no corresponding range on the main, but terminates opposite the low land of the Orinoco delta; the channel opposite to them forms the south entrance to the Gulf of Paria, and is known as the Boca del Serpente, or the Serpent's Mouth. Port of Spain, the capital of the island, is situated on the Gulf of Paria, at the foot of the northern range of hills. Immediately to the south of the town lies an extensive mangrove-swamp, through which the Caroni, one of the largest rivers in the island, finds its way to the sea. The Caroni is navigable by boats for about eighteen miles from its mouth. Sugar and cocoa are the principal products of Trinidad. The cultivation of the former is almost confined to the district along the coast of the Gulf of Paria and the valley of the Caroni; the latter is chiefly grown in the narrow, shady valleys of the northern chain of mountains. Nearly the whole of the interior of the island is utterly destitute of roads or even paths, and is covered with a magnificent growth of virgin forest. One of the most valuable trees in Trinidad is the *Cedrela odorata*, the wood of which is much used for building houses. This tree is rather like the common ash-tree in appearance and foliage, but is universally called *cedar* from the smell of the wood, which resembles that of the true cedar (*Cedrus libanotica*). In point of size, however, the silk-cotton tree (*Eriodendron anfractuosum*) is quite unrivalled. Until I went to Trinidad I did not know what a really big tree was. I had seen the oaks of Fontainebleau and the elms of Aranjuez, which are, I believe, considered the largest trees in Europe, but these do not give one the least idea of the size which trees attain in Trinidad. Had the gentleman who wrote an account, in the last-published volume of 'Long-Vacation Rambles,' of how he went up the Amazon in order to see large trees, and returned home without having succeeded in doing so,—had he only gone to Trinidad and seen the silk-cotton trees which I saw there, he must, I am sure, have been satisfied. In Venezuela this tree is called *Ceiba*. In Martinique it goes by the name of *Fromagier*, though what connexion with cheese it is supposed to have I cannot imagine.

I am inclined to believe that, owing to its warm moist climate and its rich soil, Trinidad is equal to any part of the world in rankness and luxuriance of vegetation. It especially abounds in palms, of which more than twenty species are found in the island.

I was by no means idle while in Trinidad, and I think I managed, in the course of my many excursions, to see the greater part of the island. A steamboat runs daily from Port of Spain to the town of San Fernando, which is situated about thirty miles to the south, on the Gulf of Paria. Twice a week this same steamboat continues its course beyond San Fernando to La Brea and Cedros. Shortly after my arrival I went by this steamboat to La Brea to visit the celebrated pitch-lake, which lies about two miles inland from that place. The lake, which is surrounded with dense bush, is irregularly circular, about half a mile in diameter, and has in it two or three small islands covered with trees. In the centre of the lake the pitch is soft, and seems to bubble up; at the sides it is quite hard and much crevassed, the crevasses being filled with water. Except for the said crevasses, it would have been very like the asphalt of the Paris boulevards; and this, I may remark, was the only thing I saw in the West Indies that at all reminded me of Paris. Travelling on horseback is, of course, the only way of getting about in the interior of the island, and even that is a matter of some difficulty owing to the excessive density of the forest. The longest expedition I made in Trinidad was to ride in two days right across the island to the east coast, or "*Bande del Est*" as it is called, where I remained a week. The east coast, which is exposed to the open Atlantic, is very different in its features from the shores of the Gulf of Paria. It presents towards the ocean a shore of beautiful hard sand, fringed for a length of more than twenty-five miles with a natural growth of cocoa-nut trees (*Cocos* *nucifera*). The oil extracted from these cocoa-nuts is the only produce of the district.

I arrived at Trinidad fully impressed with the idea that its avifauna was absolutely identical with that of the adjacent continent, and altogether distinct and dissimilar from that of the other islands. I have since, however, somewhat modified this opinion. In the first place, the island of Tobago has undoubtedly much more *rapport* ornithologically with Trinidad than with the other islands of the Antillean group, as is proved by the collections, especially of Humming-birds, received from that island. On the other hand, although I do not suppose that Trinidad possesses any species peculiar to itself, my list will show that there are several species, not uncommon on the adjacent continent, which I believe are never found in Trinidad. It would be the work of a lifetime to make a complete collection of the birds of Trinidad, so rich in species is the island. I do not even profess to give a list of all I saw there myself, but only of the collection I made during my stay in the island, and in my two short excursions on the mainland of South America. The shores of the lower Orinoco, and the coast between Trinidad and La Guaira, especially the immediate neighbourhood of the town of Barcelona, swarm with birds to a far greater degree than even Trinidad itself. I regret much that in my flying visit to those parts I had time to shoot so few birds, and to skin only about half of those I did shoot. In Humming-birds (*Trochilidæ*), however, I found the parts of the mainland I visited far inferior to Trinidad, which, both as regards species and individuals, is hardly to be surpassed, I should suppose, by any equal area in the world. Out of the nineteen species of Humming-birds said to be found there, I succeeded, as my list will show, in procuring fourteen.

The names in the following list are chiefly taken from Dr. Sclater's Catalogue of his Collection of American Birds. I am also indebted to Dr. Sclater for his kind assistance in identifying the species.

RAPTORES.

✓ 1. CATHARTES ATRATUS. Black Vulture.

The first thing that struck me on arriving at Port of Spain was the number of Black Vultures that swarm all over the town. There they are, on the roofs of the houses, expanding their wings in the sun, or in the streets, on the look-out for any scraps of food that may suit their taste. They live apparently on the best of terms with the fowls and chicken, which seem not at all afraid of them, and with reason, for I believe that this species of Vulture never by any chance attempts to prey on any living thing. So very tame and familiar are they, that I have often poked them with my stick or umbrella as I walked along the streets.

In Trinidad all Vultures are indiscriminately called *Corbeaux*, and the *quartier* of Port of Spain where the slaughter-houses are situated is distinguished by the name of Corbeau Town. How, where, and when these birds breed in Trinidad is a mystery I was unable to solve. The whole time I was there the town swarmed with them, and they roosted at night in the trees in the gardens and squares. I was, moreover, assured that they remain in equal numbers all the year round; yet no one could tell me anything about the time of year they breed, or seemed to know what the eggs or young were like. I found this species very abundant all over Trinidad and the parts of Venezuela I visited, especially in the neighbourhood of the towns and villages. Neither this nor any other species of Vulture occurs in any of the islands between Trinidad and St. Thomas,—not even, I believe, in Tobago, and certainly in none of the others. Porto Rico is also quite Vultureless. In Jamaica I am informed that *Cathartes aura* is the only species*. As regards St. Domingo and Cuba, I can give no information on the great Vulture question. The irides of *C. atratus* are brown.

✓ 2. CATHARTES AURA. Turkey Buzzard.

This species is not very numerous in Trinidad, where it avoids the towns and keeps to the open country. It is a much handsomer and cleaner-looking bird than the preceding species, and may be distinguished from it at a glance when on the wing by its less flapping and more graceful flight. It is generally to be seen skimming just over the tree-tops, as though it were trying how near it could go without touching. It is certainly, in its flight and general appearance, by far the most aquiline-looking species of Vulture I have ever seen, and it was not until I had shot one that I could bring myself to believe that it was really a Vulture, and not an Eagle. On the Orinoco I found this bird much more numerous and less shy than in Trinidad; but even there it did not frequent the towns in the same familiar way as *Cathartes atratus.* In Jamaica, where, as I believe, *C. atratus* does not occur, this species takes its place as scavenger in the towns and villages. Its irides are brownish red.

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* *Cathartes atratus* has also lately made its appearance as a straggler in Jamaica (see Proc. Acad. Philad. 1863).—ED.

✓ 3. GYPARCHUS PAPA (Linn.). King Vulture.

The only occasion I came across this species was on my journey through Trinidad from Port of Spain to the east coast, or "*Bande del Est*" as it is called. I and my companion had got just about halfway across the island when we suddenly came on a party of these birds, about six in number. On arriving at the place where we first saw them, I found that the attraction was an enormous dead snake in a putrid state, on which they had been gorging themselves. My friend shot one, which fell apparently dead; while I, thinking that I should like to shoot one too, went a little further into the forest and did so. Great was my surprise on returning to the one first shot to find that it had miraculously revived, and flown to the top of a high tree. The Trinidadians distinguish this bird by the name of "King of the Corbeaux."

✓ 4. POLYBORUS BRASILIENSIS.

I frequently saw this bird on the shores of the Orinoco. It was very tame, and generally allowed a near approach to the tree on which it was perching, and when disturbed did not fly far. I believe this species never occurs in Trinidad.

✓ 5. PANDION HALIAËTUS. Osprey.

This truly cosmopolitan bird is not uncommon on the Orinoco; and once or twice I saw an Osprey flying over the Gulf of Paria, not far from Port of Spain.

✓ 6. BUTEO ALBICOLLIS (Vieill.).

This fine Buzzard is pretty common in Trinidad, and is generally to be seen in the clearings in the neighbourhood of high woods. The Creole name for this and other large birds of prey in Trinidad is "*Gavilan.*"

7. ASTURINA NITIDA.

Perhaps the most common species of Hawk in Trinidad. Another common species is rather larger than the Common Buzzard (*Buteo vulgaris*), of a blackish slate-colour, with a broad white band on the tail-feathers. I shot one of these birds on the east coast of Trinidad, but unfortunately had not time to skin it.

8. FALCO PEREGRINUS, Linn. Peregrine Falcon.

I saw an individual of this species, in immature plumage, which had been killed not far from Port of Spain.

9. TINNUNCULUS SPARVERIUS. American Kestrel.

Occasionally seen in Trinidad, but much less common there than in the Antillean islands.

10. GLAUCIDIUM FERRUGINEUM.

This very minute Owl is pretty common in Trinidad. It flies about in the daytime, apparently indifferent to the blazing tropical sun. It is far smaller than any other species of Owl I ever met with.

PASSERES.

11. TURDUS GYMNOPHTHALMUS, Sclater's Cat. no. 20.

Pretty common in Trinidad.

12. TURDUS FUMIGATUS, Sclater's Cat. no. 21.

The commonest species of Thrush in Trinidad, especially frequenting the cocoa plantations.

13. TURDUS FLAVIPES, Sclater's Cat. no. 34.

Less common in Trinidad than the two preceding species.

14. MIMUS GILVUS, Sclater's Cat. no. 56.

Very abundant on the Orinoco and the coast of Venezuela, frequenting low bush and savannah, but not high woods. I do not believe this species occurs in Trinidad.

15. CAMPYLORHYNCHUS NUCHALIS, Sclater's Cat. no. 106.

The neighbourhood of Barcelona is the only locality where I fell in with this bird; there, however, it was abundant, frequenting low trees in small flocks.

16. Thryothorus rutilus, Sclater's Cat. no. 134.

Obtained in Trinidad.

17. Geothlypis æquinoctialis, Sclater's Cat. no. 171.

Obtained in Trinidad.

18. Dendrœca æstiva, Sclater's Cat. no. 194.

Common in Trinidad. Both this and the following species seem to enjoy a wide geographical range, no difference being perceptible between specimens from Trinidad and from the States of North America.

19. Setophaga ruticilla, Sclater's Cat. no. 220.

Common in Trinidad. This bird much resembles a Redstart in appearance and manner.

20. Cyclorhis flavipectus, Sclater's Cat. no. 275.

Obtained in Trinidad.

21. Dacnis cayana, Sclater's Cat. no. 308.

22. Chlorophanes atricapilla, Sclater's Cat. no. 318.

This and the preceding species are pretty common in Trinidad, and inhabit shady valleys.

23. Cœreba cyanea, Sclater's Cat. no. 320. Pink-footed Creeper.

This and the following species of *Cœreba* are abundant in Trinidad during the dry season, but I am not sure whether they breed there or not. Its legs and feet are bright red.

24. Cœreba cærulea, Sclater's Cat. no. 322. Yellow-footed Creeper.

25. Certhiola luteola, Sclater's Cat. no. 329.

Very abundant. This continental species differs from *Certhiola flaveola* and the other species or varieties inhabiting the Antilles in being rather smaller, and in not having the prominent pink lips at the gape which form so conspicuous a feature in them. Creole name, "*Sucrier.*"

26. Euphonia nigricollis, Sclater's Cat. no. 342.

Much less abundant in Trinidad than on the main.

27. Euphonia violacea, Sclater's Cat. no. 354.

Common in Trinidad, where its brilliant plumage and pleasing song render it a favourite cage-bird. Creole name, "*Louis d'Or.*"

28. Calliste guttata, Sclater's Cat. no. 382.

Decidedly the rarest of the three species of *Calliste* found in Trinidad. Local name, "Tiger Tanager."

29. Calliste desmarestii, Sclater's Cat. no. 400.

Very abundant in shady valleys and moist woods. Local name, "Cacao-headed Tanager."

30. Calliste vieillotii, Sclater's Cat. no. 404.

Found in the same localities as the preceding species. This bird is known in Trinidad by the very grotesque name of "*Diable enrhumé.*" The only suggestion that I can offer as to the origin of this remarkable sobriquet is that, in the opinion of the niggers, its note resembles the sound which his Satanic majesty might be supposed to emit in the very improbable contingency of his having a cold in his head.

31. Tanagra cana, Sclater's Cat. no. 439.

Very common both in Trinidad and on the main. It especially affects the tree called "Bois immortel" (*Erythrina coccinea*), and seems to feed on the honey contained in its brilliant scarlet blossoms. Local name, "Blue Bird."

32. Tanagra melanoptera, Sclater's Cat. no. 444.

Abundant, and generally to be seen on cocoa-nut trees (*Cocos nucifera*).

33. Ramphocœlus magnirostris, Sclater's Cat. no. 458.

Very numerous all through Trinidad. Local name, "*Bec d'Argent.*"

34. Phœnicothraupis rubra, Sclater's Cat. no. 482.

I never saw this bird near the towns or in cultivated spots, but only in deep shady woods; there, however, it is not rare. Local name, "*Le Cardinal.*"

35. Tachyphonus melaleucus, Sclater's Cat. no. 492.

Common, and generally seen in pairs. The male black, with a white patch on the shoulder; the female uniform chestnut-brown.

✓ 36. Saltator olivascens, Sclater's Cat. no. 561.

This and the following species seem to prefer dry open situations and low bush to the shade and moisture of a tropical forest. I found both species particularly abundant in the small islands Chacachacave and Monos, which are very much drier than Trinidad itself.

37. Saltator maculipectus, Sclater's Cat. no. 572.

38. Saltator, sp.?

At Ciudad Bolivar, on the Orinoco, I shot a *Saltator* rather smaller than *S. olivascens*, and much brighter coloured; unfortunately I had not time to skin it.

39. Cardinalis phœniceus, Sclater's Cat. no. 592.

The low sandy coast near the town of Barcelona in Venezuela, covered with dense bush and low trees, is the only locality where I met with this beautiful species; there, however, it was tolerably plentiful. I do not believe it ever occurs in Trinidad.

✓ 40. Spermophila intermedia, Sclater's Cat. no. 611.

Obtained in Trinidad.

✓ 41. Spermophila minuta, Sclater's Cat. no. 623.

Abundant in Trinidad in small flocks, especially frequenting the sugar-cane pieces.

42. Volatinia jacarina, Sclater's Cat. no. 634.

Common in Trinidad, but less abundant than the last species.

43. Paroaria nigrigena, Sclater's Cat. no. 650.

Not uncommon in the bush about Ciudad Bolivar. Never seen in Trinidad.

✓ 44. Sycalis brasiliensis, Sclater's Cat. no. 758.

Abundant in the bush on the shores of the Orinoco. I never saw it in Trinidad.

45. Ostinops cristatus, Sclater's Cat. no. 771.

Inhabits the high forest of Trinidad in small flocks, but is not very common.

✓46. Cassicus persicus, Sclater's Cat. no. 778.

This species is tolerably abundant both in Trinidad and on the mainland. It is a noisy, restless bird, something like a Jay in its manners. When alive or fresh killed, it has a strong, Crow-like smell. On my return from the Bande del Est, on the 20th February, I came upon a colony of these birds breeding. The locality selected was four trees standing in a small clearing in the woods, from which the long purse-like nests hung down in masses. The nests were high up, and the niggers who were with us declined to climb up the trees on account of the ants; but I managed to pull down several of the nests with a long bamboo-pole, while the birds flew about, screaming with all their might. Most of the nests contained young birds or eggs ready to hatch; however, I succeeded in obtaining a few fresh eggs. These are small for the size of the bird, being no larger than a Thrush's, white in colour, spotted and streaked with dark purple. No nest contained more than three eggs or young birds, and some less.

47✓. Icterus xanthornus, Sclater's Cat. no. 808.

Very abundant both in Trinidad and on the main: in the former place it goes by the name of "Corn-bird," probably from its bright-yellow colour. The nest is similar in shape to that of *Cassicus persicus*, but smaller; it is usually suspended from the end of the long slender fronds of the Groo-groo Palm (*Acrocomia*, sp.?). This bird does not breed in colonies, but singly.

48. Xanthosomus icterocephalus, Sclater's Cat. no. 829.

Occurs in Trinidad, but is not very common.

✓49. Leistes guianensis, Sclater's Cat. no. 835.

Obtained in Trinidad, but not abundant there.

✓50. Quiscalus lugubris, Sclater's Cat. no. 855.

Local in Trinidad; never seen by me near Port of Spain, but common in some other localities. Very tame and familiar. Irides yellow.

51. Quiscalus, sp.?

I found a species of *Quiscalus*, which I never saw in Trinidad, excessively abundant on the Orinoco and the coast of Venezuela, especially in and near the towns and villages. This bird was decidedly larger than *Q. lugubris,* and seemed more like the Antillean species *Q. barita.* I regret that I did not preserve a specimen.

52. Xenops rutilans, Sclater's Cat. no. 973.
Obtained in Trinidad.

53. Dendrornis susurrans, Sclater's Cat. no. 1012.
Common in Trinidad, where it frequents the cacao-plantations, and is accused of damaging the pods by piercing them with its long sharp bill. This bird runs up trees like a Woodpecker.

54. Thamnophilus major, Sclater's Cat. no. 1051.
Not uncommon in Trinidad, where it frequents thick bush and the outskirts of the forest. Irides red.

55. Thamnophilus atricapillus, Sclater's Cat. no. 1065.
Obtained in Trinidad.

56. Thamnophilus doliatus, Sclater's Cat. no. 1069.
The commonest species of Bush-Shrike in Trinidad, where it is called "*La Pintade,*" from its mottled Guinea-fowl-like plumage.

57. Myrmotherula axillaris, Sclater's Cat. no. 1101.
Obtained in Trinidad.

58. Formicivora intermedia, Sclater's Cat. no. 1109.
This bird seems rather local in Trinidad, as it was abundant in the low, dry bush of the small island Chacachacare, though I do not remember seeing it elsewhere.

59. Fluvicola pica, Sclater's Cat. no. 1226.
Very common in Trinidad, and tame and familiar in its habits like a Wagtail (*Motacilla*).

60. Machetornis rixosa, Sclater's Cat. no. 1245.
I believe that this species never occurs in Trinidad; but on the main I found it rather common. It does not seem at all to merit its very warlike name, but is generally to be seen on the ground, near cattle, peaceably picking up insects.

61. Mionectes oleagineus, Sclater's Cat. no. 1296.
Obtained in Trinidad.

62. PHYLLOMYIAS SEMIFUSCA, Sclater's Cat. no. 1306.

Obtained in Trinidad.

63. CAMPTOSTOMA IMBERBE, Sclater's Cat. no. 1310.

This little bird is not uncommon in Trinidad, where I obtained two or three specimens, which differ so slightly from the specimen from Mexico figured in 'The Ibis' (1859, p. 444, pl. 14. f. 1) that Dr. Sclater does not think it necessary to make two species of them,—though it seems unusual for so small a bird to range from Mexico to Trinidad.

64. ELAINEA PAGANA, Sclater's Cat. no. 1321.

Obtained in Trinidad.

65. MYIOZETETES CAYENNENSIS, Sclater's Cat. no. 1342.

A common species on the coast of Venezuela, near Barcelona. I never saw this bird in Trinidad, either alive or in collections.

66. PITANGUS RUFIPENNIS, Sclater's Cat. no. 1361.

This species, *Megarhynchus pitangua,* and *Tyrannus melancholicus* are the most abundant of all the numerous Tyrants in Trinidad, where the Creole name for the whole family is *"Qu'est-ce qu'il dit,"* from the cry of the three species named, which exactly resembles that sentence,—on the principle of the names 'Peewit' and 'Kittiwake' in England. All three species are very common and very noisy, but *Pitangus rufipennis* is the commonest and the noisiest of the three. In the morning, especially, they sit on the top of low trees screaming out *"Qu'est-ce qu'il dit"* to one another at the top of their voices. I found a nest of this species in February; it was very large and funnel-shaped, and contained only one egg nearly ready to hatch.

67. MYIODYNASTES AUDAX, Sclater's Cat. no. 1368.

Not uncommon in Trinidad: its note is quite different from that of the preceding species.

68. MEGARHYNCHUS PITANGUA, Sclater's Cat. no. 1375.

Very common in Trinidad. I found it difficult to distinguish this bird, at a distance, from *Pitangus rufipennis,* as the two species are very similar in size, colour, voice, and habits.

69. PYROCEPHALUS RUBINEUS, Sclater's Cat. no. 1395.

I found this very pretty bird tolerably abundant both at Ciudad Bolivar and Barcelona; in habits it seems very like a Flycatcher (*Muscicapa*). I do not believe that it ever occurs in Trinidad: the specimens received from thence are, I believe, killed on the main.

70. CONTOPUS BOGOTENSIS, Sclater's Cat. no. 1420.

I shot a specimen in a shady valley in Trinidad, near Port of Spain; but the species does not seem common there.

71. MYIARCHUS FEROX, Sclater's Cat. no. 1432.

I procured one specimen of this bird in Trinidad, and another on the Orinoco; but it was not abundant in either locality.

72. TYRANNUS MELANCHOLICUS, Sclater's Cat. no. 1443.

Very abundant both in Trinidad and on the main.

73. TYRANNUS ROSTRATUS, Sclater, MS.*

I shot a specimen of this fine and well-marked species in Trinidad, not far from Port of Spain. I never saw it on any other occasion.

74. PACHYRHAMPHUS NIGER, Sclater's Cat. no. 1473.

Obtained in Trinidad.

75. PACHYRHAMPHUS ALBOGRISEUS, Sclater's Cat. no. 1477.

Obtained in Trinidad.

76. PIPRA AURICAPILLA, Sclater's Cat. no. 1514.

Not uncommon in Trinidad.

77. CHIROMACHÆRIS MANACUS, Sclater's Cat. no. 1531.

Very common in Trinidad, frequenting thick shady woods, where it keeps near the ground. This little bird emits a very remarkable sound—a loud harsh noise, like that produced by striking two stones together.

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* This is the bird entered in my Catalogue as *Tyrannus magnirostris* (no. 1449, p. 236). I am now, however, convinced that it is not the *T. magnirostris* of D'Orbigny (in La Sagra's Cuba), but quite a different species, and I propose to call it

TYRANNUS ROSTRATUS, sp. nov.

T. supra cinereus; crista celata coccinea; alis caudaque cinerascenti-fuscis, secundariorum marg. ext. anguste albidis: subtus albus, pectore et lateribus cinereo adumbratis; tectricibus subalaribus et crisso vix flavicantibus: rostro et pedibus nigris; long. tota 9·0, alæ 4·5, caudæ rectr. med. 3·2, rectr. ext. 3·5, tarsi 0·8, poll. et dec. Angl.

Hab. in ins. Trin. et in Guiana.

Mus. P. L. S. et Edv. Taylor.

Obs. Affinis *T. griseo* et coloribus huic plerumque similis, sed rostro majore, crassitie paulo minore, et cauda magis furcata dignoscendus.—P. L. S.

78. Chasmorhynchus niveus, Sclater's Cat. no. 1565.

Occurs in Trinidad, but only in the depths of the forest, away from the haunts of man. It seems to prefer an altitude of from 1500 to 2000 feet, being hardly ever met with in low-lying localities. Creole name, "*Campanero.*" I have occasionally heard the note of this bird, which certainly has an impressive effect on account of the stillness of the forest; but I must say that to my ear it is more like the croak of a frog than the sound of a bell.

79. Momotus swainsoni, Sclater's Cat. no. 1578.

Obtained in Trinidad, where it is not uncommon.

80. Chloroceryle americana, Sclater's Cat. no. 1596.

Pretty common in Trinidad, especially among the mangroves in the swamps and lagoons.

81. Chloroceryle superciliosa, Sclater's Cat. no. 1599.

I found this pretty little species not uncommon in Trinidad, on the Caroni River; but I did not see it elsewhere.

82. Galbula ruficauda, Sclater's Cat. no. 1602.

Not uncommon in Trinidad, where it keeps to the shade and quiet of the deep woods.

83. Trogon viridis, Sclater's Cat. no. 1653.

Obtained in Trinidad.

84. Trogon collaris, Sclater's Cat. no. 1658.

Obtained in Trinidad, where it is less common than the preceding species.

85. Steatornis caripensis.

Towards the end of January, while in Trinidad, I set out with Mr. Krüger, the colonial botanist, to visit a cinchona-plantation which he had established on the highest ridge of the northern range of mountains. Mr. Krüger joined me at Arima, a village in the interior of the island, where I was then staying; and the next morning we set out on foot, as there was no track through the forest practicable for horses. After walking for about four hours we were quite beyond the last settlement, and having left behind us the cacao-plantations and all signs of cultivation began a steep ascent through the virgin forest. As we ascends higher the forest got more and more damp, and the croaking note of the "Campanero" (*Chasmorhynchus niveus*) began to be heard. This and a pair of Curassows (*Crax alector*) were the only birds I saw that were not already familiar to me. In fact, one seldom does see many birds in the depths of the forest, as the excessive density of the foliage prevents anything being seen. I shot, however, a snake, 7 feet long, of the species called in Trinidad "*Cribo*." We arrived at our destination just before sunset, and slept in the forest in our hammocks, at an altitude of about 2500 feet above the level of the sea. I found the night very cold, and at sunrise next morning the thermometer was only 62° Fahr. I had heard that near the cinchona-plantation there was a cave inhabited by a colony of wonderful birds, called "*Guácheros*"; so, after inspecting the cinchona-plants, I set out for the Cueva de los Guácheros, as it is called, guided by two native Spanish hunters whom we had brought with us. We followed the downward course of a small mountain-stream for about half a mile, when we came to a steep slope of rock, down which the stream tumbled and disappeared within the arch of a gloomy cavern. In this cavern were numbers of large brown birds about the size of Crows, some flying about and uttering a peculiar harsh loud scream, others sitting on their eggs, many of which we could see lying on ledges in the face of the wall of rock opposite to us, but separated from us by the chasm down which the stream disappeared. The eggs seemed to be white, and about the size of those of a Wood-Pigeon (*Columba palumbus*). The scene was a striking one. The whole place was so gloomy and overshadowed by trees, that not only did the sun not shine, but it seemed as if it never could have shone there. Were I of an imaginative turn of mind, I might have fancied that I saw before me the entrance to the infernal regions, with the *âmes damnées* flitting about, screaming in despair; but as I am not, I first took the precaution of shooting a few of the birds, and then descended into the cavern to pick them up. To my great regret, I found the eggs quite inaccessible both to my efforts and to those of the native hunters; but I secured four good specimens of the birds, which proved to be *Steatornis caripensis*. This extraordinary-looking bird is quite *sui generis,* and is very unlike the *Caprimulgidæ,* with which it is usually classed. It has the beak of a Hawk, and is without the enormous gape of a *Caprimulgus*. The feathers of the wings and tail are strong and stiff; and the food is said to be fruits. The wounded birds defended themselves with their strong beaks with great spirit. These birds are known in Trinidad as *Guácheros,* and the nestlings are eaten and much esteemed; they are said to be very delicate, and excessively fat: the old ones have a strong, Crow-like smell; their legs are nearly bare of feathers. There is another breeding-station of these birds in Trinidad, in a cave opening on to the sea, in an island near the Boca del Drago. The difference in temperature between the two caves (the one at an elevation of 2500 feet, the other on a level with the sea) must be very great; so I suppose the *Steatornis* is not particular to a few degrees of heat more or less.

86. Nyctibius pectoralis, Sclater's Cat. no. 1669.

Obtained in Trinidad from a native collector.

87. Lurocalis semitorquatus, Sclater's Cat. no. 1671.

Obtained in Trinidad.

88. Nyctidromus guianensis, Sclater's Cat. no. 1690.

Obtained in Trinidad, from a native collector.

89. Glaucis mazeppa, Gould, Mon. Troch. i. pl. 6.

Trinidad abounds in Humming-birds, as I before stated, far more than those parts of the mainland which I visited. I procured fourteen species in Trinidad, and one species on the main. I was informed that nineteen species occur in Trinidad; but I only saw the fourteen species that I proceed to enumerate. *Glaucis mazeppa* is one of the most abundant and about the least brightly coloured of the Trinidad Humming-birds. It frequents flowering trees and shrubs in gardens, where it may be seen in numbers darting about from flower to flower.

90. Phaëthornis guyi, Gould, Mon. Troch. i. pl. 26.

This species seems solitary in its habits, as, contrary to the general rule with Humming-birds, one seldom or never sees it except singly. It avoids gardens and open ground, and affects deep shady ravines and valleys. It is the only species of Humming-bird that I saw high up in the mountains, on my excursion to the cave inhabited by *Steatornis caripensis*. Local name, "Fork-tailed Humming-bird."

91. Phaëthornis longuemareus, Gould, Mon. Troch. i. pl. 31.

In habits similar to the preceding species; but less abundant, I should say, in Trinidad.

92. Dolerisca fallax, Gould, Mon. Troch. ii. pl. 56.

This sober-coloured species is the only Humming-bird I saw on the main. I found it pretty common near Barcelona in Venezuela, where I shot my specimens.

93. Lampornis mango, Linn.; Gould, Mon. Troch. ii. pl. 74.

The most abundant species of Humming-bird in Trinidad. It especially affects the tree called "Bois immortel" (*Erythrina coccinea*), which abounds in Trinidad, and blossoms in January, from the brilliant scarlet flowers of which it seems to "gather honey all the day." In the genus *Lampornis* the difference in plumage between the sexes is very striking. All Humming-birds are very pugnacious and fond of fighting in the air; the present species is preëminently so.

94. Lampornis gramineus, Gould, Mon. Troch. ii. pl. 77.

This is the largest Humming-bird in Trinidad; it is not very common, and is locally known as the "Green-throated Humming-bird."

95. Florisuga mellivora, Gould, Mon. Troch. ii. pl. 113.

Obtained in Trinidad, where it is rather rare. Local name, "Jacobin."

96. Lophornis ornatus, Gould, Mon. Troch. iii. pl. 117.

This very beautiful little species is usually abundant in Trinidad in the dry season; but when I was there, from some cause or other, it was very scarce. Local name, "King Humming-bird."

97. Chrysolampis moschitus, Gould, Mon. Troch. iv. pl. 204.

This very brilliant species is abundant in Trinidad, where it is called the "Ruby Humming-bird," from the colour of the crown of its head, which glitters like a ruby in the sun.

98. Chrysobronchus virescens, Gould, Mon. Troch. iv. pl. 230.

Obtained in Trinidad, where it is not very common. Creole name, "*Colibri vert-perlé.*"

99. Heliomaster longirostris, Gould, Mon. Troch. iv. pl. 259.

Rather a rare species in Trinidad, where it is called "Carmine Humming-bird."

100. Thaumantias chionipectus, Gould, Mon. Troch. v. pl. 293.

Tolerably abundant in Trinidad, where it frequents deep shady woods. Local name, "White-throated Humming-bird."

101. Erythronota antiqua, Gould, Mon. Troch. v. pl. 316.

A very common species in Trinidad, where it is called "Emerald Humming-bird."

102. Eucephala cærulea, Gould, Mon. Troch. v. pl. 331.

Equally common with the preceding species. Known in Trinidad as the "Sapphire Humming-bird."

103. Chlorostilbon atala, Gould, Mon. Troch. v. pl. 356.

Not very abundant in Trinidad, where I am told it prefers the open country, and is called the "Savannah Sapphire."

104. Crotophaga ani, Sclater's Cat. no. 1905.

Decidedly the commonest bird in Trinidad, where it is called "Blackbird" or "Tickbird." It is very tame and familiar, and, with the exception of *Cathartes atratus,* it is the only bird (except Humming-birds) that one sees habitually in the town of Port of Spain. It is always to be seen in fields where there are cattle grazing, to which it resorts, no doubt, for the sake of picking up the grasshoppers and other insects which are disturbed by the cattle. In the month of January it was breeding in the acacia-trees in the savannah of Port of Spain. As the egg has already been figured in 'The Ibis,' I will not describe it. On the mainland I found this bird much less numerous than in Trinidad. I did not see it at all either in Martinique or Dominica, and do not know whether it ever occurs in those islands. I found it common both in St. Thomas and Porto Rico, but not so abundant in either place as in Trinidad.

✓105. Crotophaga major, Sclater's Cat. no. 1907.
Occurs in Trinidad, where, however, it is rare.

✓106. Diplopterus nævius, Sclater's Cat. no. 1911.
Abundant in Trinidad, especially in clearings on the outskirts of the forest. Creole name, "*La Trinité.*"

✓107. Piaya cayana, Sclater's Cat. no. 1915.
Not uncommon in Trinidad.

✓108. Ramphastos vitellinus, Sclater's Cat. no. 1936.
This is, I believe, the only Toucan that occurs in Trinidad, where it is not uncommon in the depths of the forest.

✓109. Dryocopus erythrops, Sclater's Cat. no. 1984.
This fine large Woodpecker I obtained in Trinidad, but it is not very common there.

✓110. Celeus cinnamomeus, Sclater's Cat. no. 2007.
Pretty common in Trinidad.

✓111. Chloronerpes rubiginosus, Sclater's Cat. no. 2026.
This small species is by far the commonest Woodpecker in Trinidad.

112. Chrysoptilus punctigularis, Sclater's Cat. no. 2029.
I never saw this species except in the vicinity of Barcelona in Venezuela, where I saw several, and procured two specimens. I feel pretty sure that it never occurs in Trinidad.

113. Centurus tricolor, Sclater's Cat. no. 2049.
A common species in Venezuela; but I never saw it or heard of its occurring in Trinidad.

114. Ara ararauna. Blue and Yellow Maccaw.
Abundant on the lower part of the Orinoco, where I saw quantities of them flying over the river just before sunset.

115. Conurus pertinax, Sclater's Cat. no. 2077.
Very abundant in the vicinity of Barcelona in Venezuela,

where they were generally in pairs. Like most Parrots, they are very noisy. I never heard of this species occurring in Trinidad.

116. CHRYSOTIS, sp.?

A species of *Chrysotis* is very abundant in Trinidad; it roosts in the mangroves in the swamps, and is considered very good eating. I often saw it, but neglected to preserve a specimen.

117. UROCHROMA MELANOPTERA, Sclater's Cat. no. 2129.

Inhabits Trinidad in small flocks, and is known as the "Seven-coloured Parroquet."

118. PSITTACULA CYANOPTERA, Sclater's Cat. no. 2135.

I never saw this species in Trinidad, but found it excessively abundant everywhere on the main. At Carapano, in Venezuela, the whole bush seemed alive with these tiny Parrots; and I remember being struck by seeing the roof of the church there almost covered with them.

COLUMBÆ.

119. COLUMBA, sp.?

A large blue Pigeon, in general appearance resembling *Columba corensis* of the Antilles, is tolerably abundant in Trinidad, where the Creole name for it is "*Ramier*." I did not preserve a specimen.

120. PERISTERA RUFAXILLA.

Obtained in Trinidad, where it is common. Local name, "Mangrove-Dove."

121. CHAMÆPELIA SQUAMOSA.

Ciudad Bolivar is a great place for Ground-Doves; the bush and savannah in the neighbourhood literally swarm with them. This species is not quite so abundant there as the next one, and is readily distinguished from it by its much longer tail and paler colour.

122. CHAMÆPELIA TALPACOTI.

Procured at Ciudad Bolivar, where it is excessively abundant.

123. CHAMÆPELIA ALBIVITTA.

Obtained on the small island of Chacachacarc, where I saw several. I believe that this is the species of Ground-Dove common throughout Trinidad.

RASORES.

✓124. Crax alector. Curassow.

Occurs in Trinidad, where it is called the "Wild Turkey"; it is usually to be seen at the top of a high tree.

GRALLATORES.

✓125. Ardea cærulea.

Abundant in Trinidad, especially at the mouth of the Caroni River. The immature birds of this species are white. I saw also numbers of white Egrets, both in Trinidad and on the Orinoco; but as I did not procure a specimen, I am unable to identify the species. All Herons are called "Gaulins" in the West Indies.

✓126. Butorides virescens.

I found this species both in Trinidad and the other West Indian islands I visited.

✓127. Nycticorax violacea.

The Creole name for this bird is "*Crabier.*" I found it abundant in Trinidad, in the Oropuche lagoon; but did not see it elsewhere.

128. Eurypyga helias. Sun-Bittern.

I occasionally saw this species on the Orinoco, where it is often kept as a pet in houses, and is said to be useful in clearing them of cockroaches and other insects. I do not know whether it ever occurs in Trinidad. The specimens living in the Zoological Society's Gardens, though sent from Trinidad, were procured on the mainland, as I was informed by the gentleman who presented them.

129. Ibis rubra. Red Ibis.

Abundant on the Orinoco.

✓130. Tringoides macularius. Spotted Sandpiper.

Very abundant in Trinidad, in suitable localities.

✓131. Crex olivacea.

I shot a specimen of this bird in Trinidad, where, I believe, it is not uncommon.

132. Parra jacana.

Very common in swampy spots near the Orinoco, especially in the neighbourhood of Ciudad Bolivar.

133. Porphyrio martinica.

Occurs in Trinidad, in suitable localities.

NATATORES.

134. Chenalopex jubatus. Orinoco Goose.

Common on the Orinoco.

135. Sterna magnirostris.

This large, Gull-like Tern is very abundant on the Orinoco. Its dark-grey back and big yellow bill are conspicuous characters when it is on the wing. I did not see it elsewhere than on the Orinoco.

✓136. Sterna cayana.

A large Tern with a red bill, which I have little doubt was of this species, was flying about in numbers in the roadstead of Pampator, in the island of Margarita, which was the only place in which I saw it.

✓137. Fregata aquila. Frigate Pelican.

Common all over the West Indies.

138. Sula fiber. Booby.

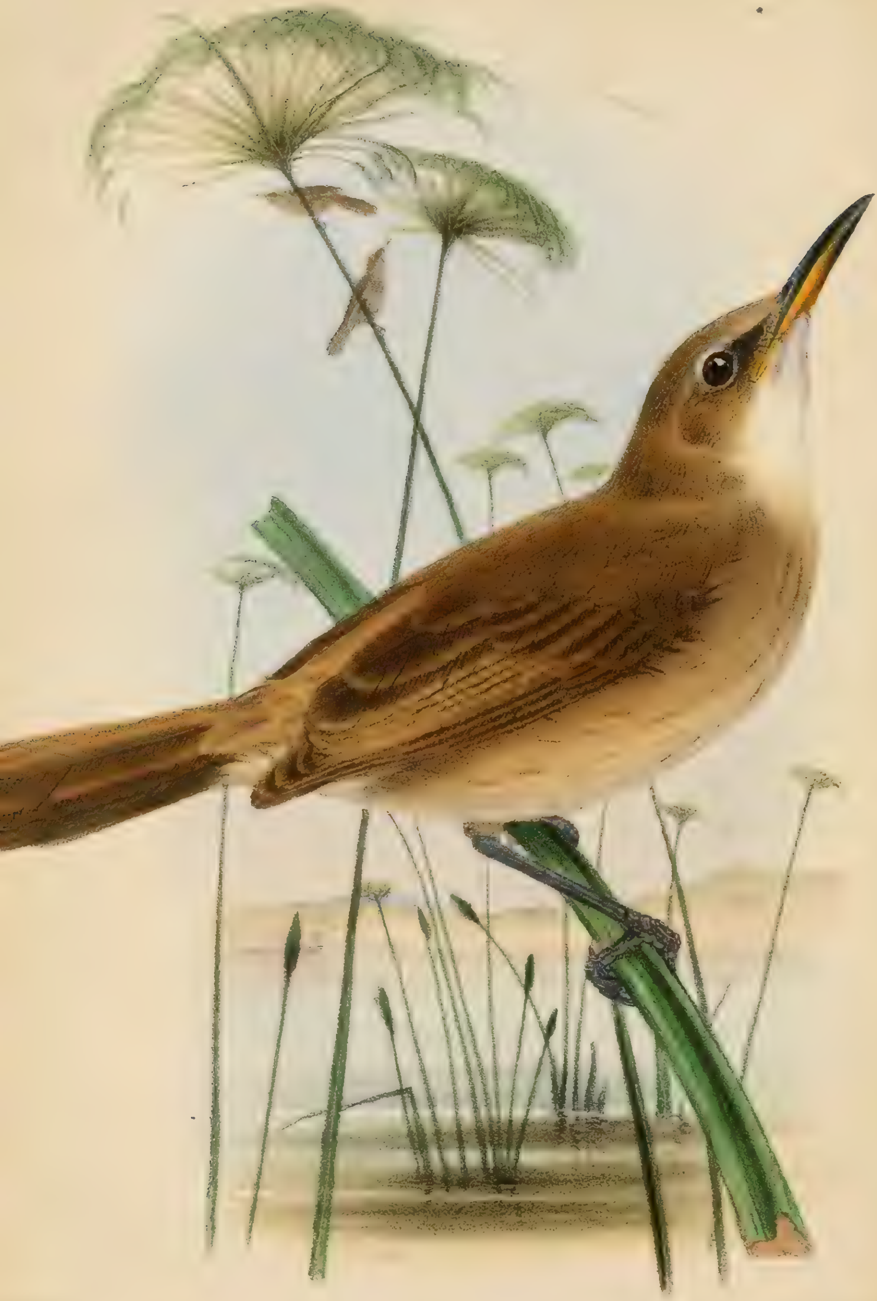
In flight and manner of plunging into the sea, very like the Gannet of Europe (*Sula alba*), to which, in size, it bears about the same proportion as *Pelecanus fuscus* does to *P. onocrotalus*.

✓139. Pelecanus fuscus.

Decidedly the most abundant species of sea-bird in the West Indian waters.

140. Plotus anhinga.

I saw several of these birds on the Orinoco. They were generally perched on the stump of a tree overhanging the river, ready at the shortest notice to plunge into the water.



[illegible] M&N Hanhart.

ACROCEPHALUS [illegible]

141. Phalacrocorax, sp.?

I saw Cormorants on many occasions, especially in the roadstead of Pampator, where they were abundant. They seemed to be about the size of *Ph. carbo*; but I did not obtain specimens.

V.—*On* Acrocephalus stentorius, *a rare Species of Sedge-warbler from Egypt*. By S. Stafford Allen.

(Plate I.)

I came upon this remarkable and almost unknown species quite by accident, whilst searching unsuccessfully for the Violet Gallinule (*Porphyrio veterum*) in a small lake about six miles from Damietta, in May 1863.

Shortly after entering the labyrinth of tall reeds which covers the greater part of the lake, and is intersected by narrow lanes of water, along which the flat-bottomed boat is poled, a curious harsh grating note burst out suddenly, with almost startling abruptness, from the reeds a little distance ahead, and was answered by others in two or three different directions.

On questioning the Arabs who accompanied me, they replied that it was "only a little bird," which I could scarcely believe at first; but on watching the spot closely for a short time, we presently saw a little sober-coloured bird, rather larger than a Nightingale, hopping in and out among the reeds, every now and then making the air ring with his noisy song.

After some little trouble, owing to their active habits and the difficulty of getting far enough away to avoid injuring them too much, I succeeded in obtaining two specimens, which at the time, not having any books, or skins for comparison, at hand, I took for the Thrush-like Reed-warbler, *A. turdoides*, Temm., though, on seeing the two species together afterwards, the differences were sufficiently obvious. In consequence of this mistaken idea, I omitted putting down the dimensions of these birds and other particulars before skinning, as is my usual practice with the rarer species.

The specific name given to this species in the only published notice of it, which occurs in Hemprich and Ehrenberg's work on the 'Natural History of Egypt and Palestine'*, is highly appropriate, as its loud voice is the first point that strikes the observer. Two out of the three specimens mentioned in the above work were obtained in the neighbourhood of Damietta; the third from the shores of the Red Sea.

Rüppell does not appear to have met with this Reed-warbler, as it is not mentioned in his work, and it seems probable that the species will prove to be extremely local.

As I am likely to be in Damietta again in the course of next spring, I hope to be able to supply the readers of 'The Ibis' with more full and accurate particulars respecting the habits, &c., of this curious little bird, and to obtain a good series of specimens.

VI.—*On the* Didunculus strigirostris, *or Tooth-billed Pigeon from Upōlo.* By E. P. Ramsay.

It appears that the Tooth-billed Pigeon (*Didunculus strigirostris*) of the Navigator Islands is not quite extinct, as has been supposed; and many of your readers will be glad to learn that a living specimen of this peculiar bird has been brought to Sydney from Upōlo, one of that group of islands, by Mr. Williams, H.B.M. Consul. Mr. Williams has kindly allowed me to examine his specimen several times, and has given me the following information respecting its habits.

The *Didunculus*, or *Enalleodea*, is known by the natives under the name of *Manu-mèa*, and was at one time very plentiful on the islands, especially upon Upōlo, where, in August 1862, Mr. Williams obtained his bird. Owing, however, to the number of cats which now infest the island, the *Manu-mèa* has become almost extinct.

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* Hempr. et Ehr. Symb. Phys., Aves, fasc. i.:—

"*Curruca stentorea*, H. & E. Specimina 3 adsunt, unum Damiatticum Ægypti inferioris, duo Maris Rubri meridionalis. Habitu et colore *Curruca* (*Sylviæ*) *turdoidi* simillima, sed paullo inferior, sexpollicaris, remigum 2da quam 5ta aut 6ta minore, rostro longiore, pedibus gracilioribus. *C. turdoides* differt, statura majore, remigum 2da et 3tia longissimis, pedibus validioribus, longioribus, rostro breviore et paullo altiore. Plura alibi."

The natives also had a great share in its destruction; for as long as this Pigeon could be procured in considerable numbers, they were in the habit of making annual excursions into the mountains for the sole purpose of catching and feasting on the *Didunculus*. The natives used bird-lime, made from the gum of the breadfruit-tree mixed with oil, to secure the birds, or caught them in nets by making use of a decoy *Manu-mèa* kept for the purpose.

The *Didunculus* is strictly a ground-Pigeon, giving a decided preference to the thickly wooded sides of the mountains, where, when plentiful, they assemble in flocks of from ten to twenty in number, feeding upon berries and wild fruits, their favourite food being the mountain-plantain. On taking flight, they make a great flapping, which has given rise to the native saying, "As noisy as a *Manu-mèa*." The only note observed by Mr. Williams (and which I myself have since heard) is a very low plaintive cry, something like that of a young chick, repeated only once or twice.

The head, neck, and upper part of the chest are of a dull slate-blue colour, the feathers on the back of the head and neck and on the lower sides of the neck having a gloss of metallic green in some lights. The lower part of the chest, breast, and abdomen are of a dull slaty brown; the edges and under sides of the wings and the under tail-coverts are of a dark brown. The scapular region is brown, the centre and edges of the feathers being chestnut, as are the short feathers on the wings, with the exception of the very short feathers covering the primary quills, which are a dull dark brown. The upper parts of the outer webs and tertiaries are chestnut; the rest of the tertiaries and the secondaries are dark brown. The back is of a deep-chestnut tint; the upper tail-coverts a dull dark brown, centred and margined broadly with chestnut. The tail is of a deep chestnut, the outer feathers being the shortest, and their inner webs being brown. Some of the tail-feathers of this specimen are missing, but I believe it had originally fourteen in all.

The bill is of a bright deep flesh-colour, with a slight tint of orange, becoming light flesh-colour at the inner edges of the mandibles, and almost light horn-colour at the tip of the upper mandible, which has besides a dark line down the margin. The eyelids and cere (or what answers to the latter) are flesh-colour; the iris of a rich dark brown, the centre of the eye being black. The legs and feet are of a deep flesh-colour, the claws almost white; and the tarsi have a few scales in front, the rest being bare, with a smooth skin.

The bird is quite a young specimen, and still has a patch of light-brown feathers on the side of the head and throat, through which can be discerned a few feathers of the new plumage *.

VII.—*Remarks on the Habits, Distribution, and Affinities of the Genus* Pitta. By ALFRED R. WALLACE.

THE beautiful birds which are now generally included in the single genus *Pitta* have lately been monographed by Mr. Elliot, and have also been the subject of an article by Prof. Schlegel in the 'Muséum d'Histoire Naturelle des Pays-Bas,' as well as of a monograph forming the first part of a work entitled 'Les Oiseaux des Indes Néerlandaises,' while the first volume of Mr. Jerdon's 'Birds of India' gives an accurate account of the species inhabiting that country. The time therefore seems appropriate for generalizing the information contained in these works as to the geographical range of the several species, and for giving a few observations on the habits of those which I myself met with in the Malay Archipelago.

The Pittas, or Ground-Thrushes, are a group of insectivorous birds which inhabit the forests of the Eastern tropics, and are generally adorned with brilliant and strongly contrasted colours. The rich blues and crimsons, the delicate greens, yellows, and purples, the velvety black and pure white (three of which tints at least generally adorn each species) remind one of the Tanagers of South America; and, in fact, these two groups are almost the only ones which have no one characteristic tint or style of dress, but whose different species seem free to adorn themselves with the brightest hues from Nature's laboratory. There is, however, this difference, that whereas the Tanagers are a dominant group, abounding in genera, species, and individuals, over a very wide area, and presenting to our view much variety of form and almost every possible combination of colours, the Pittas are a small and probably decreasing genus, with but slight modifications of form, and alike poor in species and in individuals. They inhabit a district which has been recently broken up into many fragments, and which seems to have been, during long epochs of the past, in an unstable and ever-changing condition. The effects of such changes of surface are to be traced in the constitution of this lovely genus, which, though so small, yet presents us with at least ten distinct styles of coloration, each of which, under more favourable circumstances, might have been the nucleus of a group of variously modified species.

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* Dr. Bennett's latest letters to the Secretary of the Zoological Society (read at the Meeting on the 10th November last) announce the arrival in Sydney of a second living specimen of the *Didunculus*; and that, with his usual liberality, he had purchased the pair for the Society, and was intending to send them to England by the first convenient opportunity.—ED.

In form the Pittas are characterized by a short rounded body, densely clothed with plumage, by very long legs, short wings and tail, and by a long and strong bill, so much like that of a Jackdaw or Jay as sufficiently to explain why Linnæus named the only species known to him *Corvus brachyurus*. Their motions are very pleasing. They never seem to hurry, and yet get along at a great rate by hopping, generally on the ground, but occasionally perching on a stump or bush, and, when hard pushed, taking a long, straight, and silent flight. They are almost universally rare birds, and are only to be met with by assiduously searching for them in the station which each species is found to prefer. Sometimes they frequent deserted plantations and dense thickets near villages. I obtained the beautiful *Pitta elegans* in such places near Palembang, in Sumatra. Most of the species are, however, found only in the virgin forests, often preferring the densest and thorniest jungles, where it is almost impossible to catch sight of them, except when so near that they cannot be shot without spoiling the specimen. In the island of Bouru the *Pitta rubrinucha* was only found among the tangled coils of the prickly rattan-palms, where it is impossible for a man to pass without first laboriously hewing a pathway. My best hunter had seen this bird many times during our two months' stay in the island, without ever being able to secure a specimen. Not liking to be beaten, he proposed to me to go and sleep in a deserted hut near the place where he had most frequently seen it; because just after sunrise they are busily feeding, and are more easily approached. His plan succeeded, and he shot two adult specimens; but he was so close to one of them that it was literally blown into several pieces; and his success cost me his services for a fortnight, owing to his having seriously torn and cut his feet in his too eager pursuit after the game in its prickly fastness. In the Aru Islands the beautiful species *P. novæ-guineæ* and *P. mackloti* quite baffled my Malay hunters; but the little Papuan boys, creeping stealthily through the thick jungle, shot them with blunt prong-headed arrows, and thus procured me many fine specimens. The noble *Pitta maxima*, one of the very finest birds of the Malay Islands, is found only in the rocky forests of the mountainous island of Gilolo, where it hops among the crags and stones with such activity that it is very difficult to follow it. The only place where I could do more than catch an occasional hasty glimpse of a *Pitta* was in the island of Lombock. The *Pitta concinna* was there rather plentiful in a level sandy tract densely overgrown with low trees and shrubs and intersected by numerous pathways. As there were very few insects in the neighbourhood to distract my attention, I devoted a good deal of time to shooting; and nothing gave me more pleasure than hearing the note of a *Pitta*, watching for it to appear, and getting a successful shot at it through some narrow opening in the jungle. The bird's presence would often be first made known by its little pattering tread among the dry leaves; a glimpse would then be obtained as it passed lightly under the thickest of the covert, and the least motion to obtain another glimpse would often be followed by a slight flutter and flash as it flew almost noiselessly away. A dead *Pitta*, as it lies when just shot, is exceedingly beautiful. You do not find it lying on its side, or all in a heap, like other birds, but invariably flat on its back, the feet up in the air, the plumage beautifully puffy, and the crimson patch on the belly displayed to the best advantage. This peculiarity of the dead bird is perhaps owing to the short tail and wings and the roundness and plumpness of the body; but it produces an effect which I was never weary of admiring, and gave a crowning charm to the excitement and pleasure of *Pitta*-shooting.

The voice of all the smaller species that I met with was of a constant character, and could easily be distinguished from that of any other bird. It is a plaintive whistle of two notes, the second lengthened out and quickly succeeding the first. When the birds are undisturbed, this cry is repeated at intervals of a minute or two. The large *P. maxima* and the *P. elegans* have each three notes of a similar character, according to the testimony of my Malay hunter; and Mr. Jerdon gives three notes also to the *P. bengalensis.*

The food of the Pittas consists of various kinds of insects, especially Coleoptera and small Orthoptera, and also of worms. Their powerful bill enables them to dig for these latter, as is proved by its often being incrusted with earth. They do not seem to like ants, as I never found these insects in their stomachs, nor do they frequent places where ants most abound. Another consideration would also lead us to the conclusion that to feed on ants is not the part which the Pittas have to play in the economy of nature; for these insects are everywhere abundant in the tropical forests; many of the species swarm in countless myriads of individuals, and it is therefore natural to suppose that the birds which could find in them a congenial food would be abundant also, and would be as ubiquitous as the ants themselves. The true Ant-Thrushes (*Formicariinæ*) of South America do answer this description, which the Pittas do not; and the comparative scarcity and irregularity of their most congenial food may be one reason why these lovely birds are so invariably scarce and local.

In the majority of the species the sexes certainly do not differ; in some, however, the fact is doubtful. In the large *P. nipalensis,* the female, according to Hodgson, is duller coloured and more rufous on the back. Mr. Elliot describes sexual differences in several of the species, especially in *P. cyanura, P. elegans,* and *P. cærulea,* but does not state on what authority he has determined the differently coloured specimens to be adult and fully plumaged females. Prof. Schlegel, who has obtained these species with the original notes of the naturalists who procured them, seems to consider that the females, when fully adult, in every case resemble the males; and in this I am inclined to agree with him. If the adult female of *P. cærulea* is the brown bird so generally supposed to be that sex, it would almost seem a good ground for establishing a genus for this in many respects peculiar species.

The nidification of only four species has been observed—*Pitta strepitans* in Australia, *P. cyanura* in Java, *P. cucullata* in North India, and *P. venusta* in Sumatra. All these build their nests near the ground, rather rudely formed of sticks or reeds, roots, dead leaves, and moss. *P. strepitans* lays four eggs, which are creamy white, blotched and spotted with brown; those of *P. cyanura* are described as being similar in colour and markings, but five eggs were found in a nest, while the only nest of *P. venusta* ever found had two eggs of a pure white colour. The nest of *P. cucullata* is described by Jerdon as being formed principally of roots and fibrous materials, and as having three eggs, of a faint greenish white, with a few reddish and brown spots.

On looking through the works of Messrs. Elliot and Schlegel already alluded to, I have been surprised to see the large proportion of the species about which no information whatever has been obtained, and of which even the colours of the bill, feet, and iris had to be put in by guess. The specimens collected by Müller and the other Dutch naturalists in the Archipelago appear to have been all obtained through native collectors; and no care seems to have been taken to teach these men to make the necessary observations while skinning the birds. Having myself shot or skinned more species of *Pitta* than any other person, and wishing to make this communication as complete and useful as possible, I will here give the colours of the soft parts of all the species collected by myself, or of which I have obtained accurate information from the person who shot them.

P. crassirostris .	Bill black, base of lower mandible horny, feet pale horn- or flesh-colour, iris dark.
P. vigorsi . .	Bill black, feet pale yellowish horn-colour, iris dark.
P. concinna .	Bill black, feet pale yellowish horn-colour, iris dark.
P. muelleri . .	Bill black, feet blackish, iris dark.

P. novæ-guineæ	Bill black, feet dusky, iris olive-brown.
P. celebensis	Bill blackish horny, feet dusky lead-colour, iris pale olive.
P. rubrinucha	Bill blackish horny, feet light bluish lead, iris light olive-brown.
P. rufiventris	Bill dark horny, base of lower mandible reddish beneath, feet pale lead-colour, iris olive.
P. cyanonota	Bill blackish horny, feet dusky olive, iris olive.
P. mackloti	Bill black, feet dusky, iris olive.
P. elegans	Bill black, feet olive-brown, iris dark.
P. granatina	Bill black, feet black, iris purple-black.
P. maxima	Bill black, feet pale yellowish horn-colour, iris dark.

The genus *Pitta* has been subdivided into three named genera, which are tolerably well characterized; but several others would seem equally worthy of being separated, owing to there being numerous slight modifications of form in the most nearly allied species; and the whole group is so compact and natural, that I prefer following those naturalists who keep it entire. There are, however, four distinct groups of species, each characterized by a peculiar style of colouring, and several other smaller groups and isolated species which it is impossible to combine naturally with any of these. And whereas the genus, treated as a whole, seems irregularly and, as it were, fortuitously scattered over a wide area, yet when we consider the separate groups of species above alluded to, we find them in many cases to have each a well-defined and restricted geographical range. I shall therefore divide the genus into sections, which agree generally with those of Bonaparte, and consider the distribution of each separately.

Sect. 1. The green-backed species, buff beneath, with dark head, blue shoulders, and red belly. These may be arranged geographically as follows:—

1. *angolensis*	West Africa.
2. *bengalensis*	India proper, from Himalayas to Ceylon.
3. *nympha*	China.
4. *cyanoptera*	Malay Peninsula, Sumatra, and Borneo.
5. *megarhyncha*	Banca Island.

6. *crassirostris*	Sulla Islands.
7. *vigorsi*	Banda Island.
8. *irena*	Timor and "Ternate," Schleg. (query *crassirostris*).
9. *concinna*	Lombock, Sumbawa, and Flores.
10. *strepitans*	Australia.

This form therefore extends over the whole area of the genus, from West Africa to Eastern Australia. It is absent, however, from the Philippine Islands, Celebes, Java, and New Guinea, where species of other sections take its place. Having such a wide range, and being of comparatively simply-coloured plumage, this group may be looked upon as typical of the genus, as being that portion of it which probably retains most of the primitive type, and from which the other more brilliantly coloured and more isolated forms may be supposed to have been derived.

Sect. 2. Species in which the buff of the under parts in the last group is replaced by green. All are of comparatively small size:—

11. *cucullata*	Nepal, Burmah, and the Malay Peninsula.
12. *muelleri*	Sumatra and Borneo.
13. *bangkana*	Banca Island.
14. *atricapilla*	Philippine Islands.
15. *forsteni*	Celebes.
16. *novæ-guineæ*	New Guinea and the Papuan Islands.

This group has also a rather wide range, extending from the Himalaya to New Guinea. A remarkable feature of its distribution is the gap between Celebes and New Guinea (including all the Molucca Islands), in which no species of this section seems to exist.

Sect. 3. Species with ashy-blue breast and red belly, and which want the silvery-blue patches on the rump and shoulder of the preceding groups:—

17. *erythrogastra*	Philippine Islands.
18. *celebensis*	Celebes.
19. *rubrinucha*	Bouru.
20. *rufiventris*	Gilolo and Batchian.
21. *cyanonota*	Ternate.
22. *mackloti*	New Guinea and the Papuan Islands.

This compact little group of closely allied species is confined to the Austro-Malayan province, with the exception of one species from the Philippines. These islands, however, though placed in the Indo-Malayan province, show a decided affinity in many of their productions to those of the island of Celebes, with which they were probably at some former period more closely connected than at present. We may therefore consider this to be a very well-defined geographical group.

Sect. 4. Species with finely banded breast, brown back, yellow coronet, and elongated tail:—

23. *elegans* . . . Malay Peninsula and Sumatra.
24. *schwaneri* . . Borneo.
25. *cyanura* . . Java.

This distinct group of most elegant birds, to which the name of *Pitta* has been by some authors restricted, has a very definite geographical range, being confined to the three great Malayan islands and the peninsula, which so closely resemble each other in every department of nature. The very close connexion of Sumatra with the Asiatic continent is here, as in so many other cases, indicated by an identity of species, while Java and Borneo possess each very distinct forms.

Sect. 5. Species entirely purple and red, with blue wing-coverts and neck-stripe:—

26. *granatina* . . Malay Peninsula and Borneo.
27. *venusta* . . . Sumatra (Borneo ?).

A small but very distinct and beautiful group, which cannot be naturally combined with any other species of the genus. It differs from Sect. 3, with which Bonaparte placed it, in its shorter wings and its smaller hind toe and claw, as well as in its quite distinct style of coloration.

Sect. 6. Species with red back, blue crown, and white throat and wing-band:—

28. *baudi* . . . Borneo.

This exquisite bird is so distinct in the arrangement of its colours, that it cannot be placed with any of the other groups. It seems to have relations to the species of the last two sections, with which it also consorts geographically.

Sect. 7. Black, with green back, blue shoulder-patch, and reddish belly:—

29. *iris*	North Australia.

This species, though much isolated, has evident relations with the birds of Sect. 2; and as it is only found in the extreme north of Australia, I have little doubt that the same or an allied species exists in the southern parts of New Guinea. This species, in fact, approaches so much to *Pitta novæ-guineæ*, that it ought perhaps to have been placed in the same section.

Sect. 8. A large species, black, with white breast, red belly, and blue shoulder-patches:—

30. *maxima* . .	Gilolo.

This magnificent bird, perhaps the finest of the genus, is much isolated; the form of its wings, the pale-coloured legs, black head, crimson belly, white wing-bar, and blue shoulder-patch show its nearest affinities to be with Sect. 1.

Sect. 9. A large light-blue bird, spotted beneath.

31. *cyanea* . . .	Arracan, Tenasserim.

This is another remarkable and very distinct bird, which by its somewhat elongate tail approaches Sect. 4, while its colouring and size would more approximate it to the next. It is interesting to remark that its geographical position is also intermediate between that of these two groups.

Sect. 10. Large birds of dull colours and somewhat coarse plumage:—

32. *nepalensis* . .	Nepal to Arracan.
33. *cærulea* . . .	Peninsula of Malacca, Sumatra.

These species depart most from the typical characters of the genus, and have been separated under the name of *Heleornis*. It seems preferable, however, not to break up the genus, but to retain these as an aberrant section.

Let us now carefully examine the preceding list of species, and cull the various interesting facts of distribution with which it furnishes us. The first thing to notice is that two of the largest groups (Sections 1 and 2), comprising sixteen species, are widely distributed over nearly the whole area of the genus, and are nearly equally divided between the Indian and Australian zoological regions. Of the remaining groups, five sections, comprising nine species, are Indian, while three sections and seven species are Australian. The great majority of the species, however, inhabit the Malayan Islands, as distinguished from the continent of Asia on the one hand and Australia on the other. Thus we find in

Africa and Asia . .	6	species of	3	groups,
Australia	2	,,	2	,,
Malay Islands . . .	25	,,	8	,,

proving that the genus is preeminently Malayan, and is one of the very few which characterize the Archipelago as a whole, and not, as is much more frequently the case, the eastern or western portion of it only.

The island which contains the greatest number of species is Borneo, which would thus seem to be the metropolis of the group. It possesses five or perhaps six species; Sumatra and the Malay Peninsula each have five; the Philippines possess two; and Java only one. These islands combined, constituting what I term the Indo-Malayan province, have thus fourteen species of *Pitta*. Further east, no one island possesses more than two species, due partly to the much smaller size of the islands, and also because in the great island of New Guinea we reach the eastern limit of the genus. On combining these islands to form the Austro-Malayan province, only ten species of *Pitta* are found to inhabit it. The variety of form also, as expressed by the number of sections into which the species fall, is greater in the Indian than in the Australian division of the Archipelago. Thus,

Austro-Malayan province .	10	species of	4	groups.
Indo-Malayan province . .	14	,,	6	,,

It is interesting to remark that two species of the same group scarcely ever inhabit one island: where two or more species are found in an island, they almost invariably belong to as many distinct sections of the genus. This illustrates Mr. Darwin's theory of the extermination of closely allied forms by the more dominant race, and also of the effects of intercrossing in keeping up the uniformity of a species over a wide area. It thus happens that it is on the continent that the species have the widest range, though the varieties of physical condition in India, from the Himalayas to Ceylon, must certainly be greater than from island to island in the Archipelago. But those slight modifications which tend to bring a species into more exact harmony with surrounding conditions can be accumulated and rendered constant by "natural selection" in an island where intercrossing with the forms of other districts is impossible; while on a continent the same mode of action will be very often neutralized by the intermingling of the various forms which must occasionally come in contact with each other, except where the habits of the animal are much opposed to locomotion. It is an interesting confirmation of this theory that the only species of *Pitta* which presents any well-marked varieties is that which has the widest range. Two or three forms of *P. bengalensis* have been described as distinct species; but it is found that these forms are unstable and graduate into each other. We have here an evident tendency to produce distinct forms, which intercrossing continually prevents; but if continental India were broken up into three or four large islands (a change which the southern extremity of Asia has already undergone), we can hardly doubt but that a form specially adapted to the conditions, physical and organic, of each island would be developed by natural agencies from the variable material that we know already exists there. This segregation has already taken place to a remarkable extent in the Archipelago. Generally speaking, each island or little group of islands has its peculiar species distinct from those of the islands that surround it. Some of these cases of localized species are among the most extraordinary known. The little island of Banda, hardly more than a mile across, has a species peculiar to it. Ternate, a mere volcanic satellite of Gilolo, and not more than ten miles from it, has a *Pitta* all to itself, though closely allied to the distinct species which inhabits the large islands of Gilolo and Batchian. The small rugged metalliferous island of Banca, between Sumatra and Borneo (but so close to the former island as to seem only a detached fragment of it), has actually two species peculiar to itself; while, what is still more strange, the two allied species of which they seem to be modifications (*P. cya-*

noptera and *P. muelleri*) are both common to the great islands of Sumatra and Borneo. This is an arrangement totally opposed to our ideas of putting the right bird in the right place. It is exactly as if the Isle of Man possessed two peculiar species of Thrush, while the allied species were common to Britain and Ireland.

Those naturalists (and I fear they are many) who consider that the Darwinian school attempts to explain too much of the mystery of nature will perhaps think that I should give some idea of how this anomalous state of things came about, and, if I neglect to do so, will lay claim to it as a fact in opposition to my own doctrines. Now though I entirely object to judgment being passed on a theory of nature by its power to explain *all* mysteries—seeing that the most important data for solving such problems as this are almost always wanting—yet in the present case it is by no means difficult to give a fair conjectural explanation. Modification of form is admitted to be a matter of time. The amount of diversity in the organic remains of two beds or strata is a measure of the time between the deposition of those strata. So the amount of diversity in the species of two adjacent islands is the measure of the time those islands have been separated. In the present case, therefore, as the island of Banca, close to Sumatra, presents in this genus a greater diversity from it than does Borneo, it would follow that Banca was separated and became an island at a time when Sumatra and Borneo were still united. Looking at the position of these islands on the map, this seems hard to believe; but it is in reality by no means improbable. The whole coast of Sumatra opposite Banca is barely raised above the level of the sea, and is a network of tidal channels through a soft alluvial soil. Evidently this part of Sumatra is newly formed land, the result of the action of tropical rains on the mountains and high lands more than a hundred and fifty miles back in the interior. The nearness of Banca to Sumatra is therefore recent and illusory. The south-west coast of Borneo is almost equally low, and has been increasing in a similar manner. The sea immediately between Sumatra and Borneo has thus been lately filled up by alluvial deposits: it was formerly deeper; and the connexion between those islands was not in this direction, but through the intervention of the Malay Peninsula. The position of the Anamba and Natuna Islands, and a sea under fifty fathoms deep, show the probable line of connexion of Borneo with Malacca, while the narrow and island-choked strait west of Singapore indicates the point of junction with Sumatra. At this time Banca was already isolated; its rocky surface and mineral products show a great resemblance to the peninsula, from which it was probably separated at a still earlier period. There is therefore a *primâ facie* case for considering Banca to be an older island than Sumatra or Borneo. If so, the fact of its possessing these peculiar species is exactly what we might expect, instead of being the hopeless puzzle it seems to be if we only take into consideration the present position of the surrounding islands. I have dwelt somewhat fully on this case, because it is one of the most interesting with which I am acquainted; and though the explanation I have offered of it is in a great measure hypothetical, it shows in a most forcible manner how impossible it is to understand the curious problems presented to us by the geographical distribution of animals, without taking into consideration all the probable and possible changes which may have recently taken place in the distribution of land and water on the earth's surface.

The position which the genus *Pitta* should hold in a natural arrangement of birds, and its relations of affinity to the other genera and families of Perchers, are problems which cannot yet be said to be satisfactorily solved. By most recent authors *Pitta* has been considered to belong to the same family as the American Ant-Thrushes, along with a host of other genera of obscure affinities. Messrs. Horsfield and Moore include all these as a subfamily of the true Thrushes, while Cabanis and Dr. Sclater consider them to belong to distinct sections of Passeres. Bonaparte, in his family *Pittidæ,* included several other genera, such as *Brachypteryx, Pnoëpyga,* and *Myiophonus,* all inhabiting the same countries as the Pittas, and having considerable resemblance to them in form and habits, but differing totally in coloration. Mr. Elliot, in his 'Monograph of the *Pittidæ,*' gives only the species of *Pitta,* to which I presume he intends to restrict the family.

Judging from external characters alone, it would seem almost impossible to separate the Pittas from the *Formicariidæ,* or from the above-mentioned genera with which Bonaparte associates them. The first primary in all these groups is more or less developed—a character which at once distinguishes them from the *Turdidæ,* in which it is always rudimentary; and the structure of the bill and feet, as well as the general form and habits, present no constant differences of the slightest importance.

An examination of the sternum and its appendages in these birds does not throw much light on the matter, though it serves to confirm the isolation of *Pitta,* which is expressed in its peculiar colouring rather than in its external form or habits. In *Brachypteryx, Myiophonus, Zoothera,* and *Henicurus* the general form of the *sternum* is so much like that of the Thrushes, that it is hardly possible to seize on any character to separate them. In *Myiophonus* it has rather a lower keel, and the forked processes of the *episternum* are rather blunter and more divergent, while the coracoids are a little longer. *Brachypteryx* almost exactly resembles *Turdus fumidus* in the form of the sternum; but the branches of the *episternum* are more slender. In *Pitta* the differences are more apparent: the keel is high and arched, and rises more abruptly from the extreme posterior margin than in any of the above-mentioned species, and this margin is very much narrowed. The anterior extremity of the keel is much produced, and the anterior margin hollowed out in a deep curve above the large *episternum.* This is most remarkable on the under surface, where it forms a perfect Y with slender cylindrical arms, differing in this part of the sternum from any Passerine bird I possess. The coracoids are long and stout, as in *Myiophonus,* considerably exceeding in length the *sternum* itself from their insertion to the posterior margin. The only Formicariine sternum which I have been able to examine is that of a species of *Grallaria.* This so closely approaches the same part in *Brachypteryx* as to suggest a direct affinity; while the differences, where they exist (as in the lower and less arched keel), are such as to remove it rather further than that genus from the form of the sternum in *Pitta.*

It would seem therefore that, pending a more accurate examination of the details of structure in these and the allied genera from all parts of the world, we must consider the Pittas to form a group apart, closely allied to *Myiophonus, Brachypteryx,* and *Pnoëpyga,* and, through them, to the South American *Formicariidæ. Cinclus, Henicurus, Eupetes,* and *Zoothera* seem also to come in the same group; and it is a question whether the whole of the *Timaliidæ* must not follow them. These would form a large and very natural family of short-winged terrestrial or semi-terrestrial insectivorous birds, of which the *Pittinæ, Myiophoninæ, Cinclinæ,* and *Timaliinæ* would be the Old-World section, while the *Thamnophilinæ, Formicivorinæ,* and *Formicariinæ* would characterize the New World.

This arrangement is put forward with much diffidence as a mere suggestion which has arisen from the comparisons of these various groups while endeavouring to make out the affinities of the genus *Pitta.*

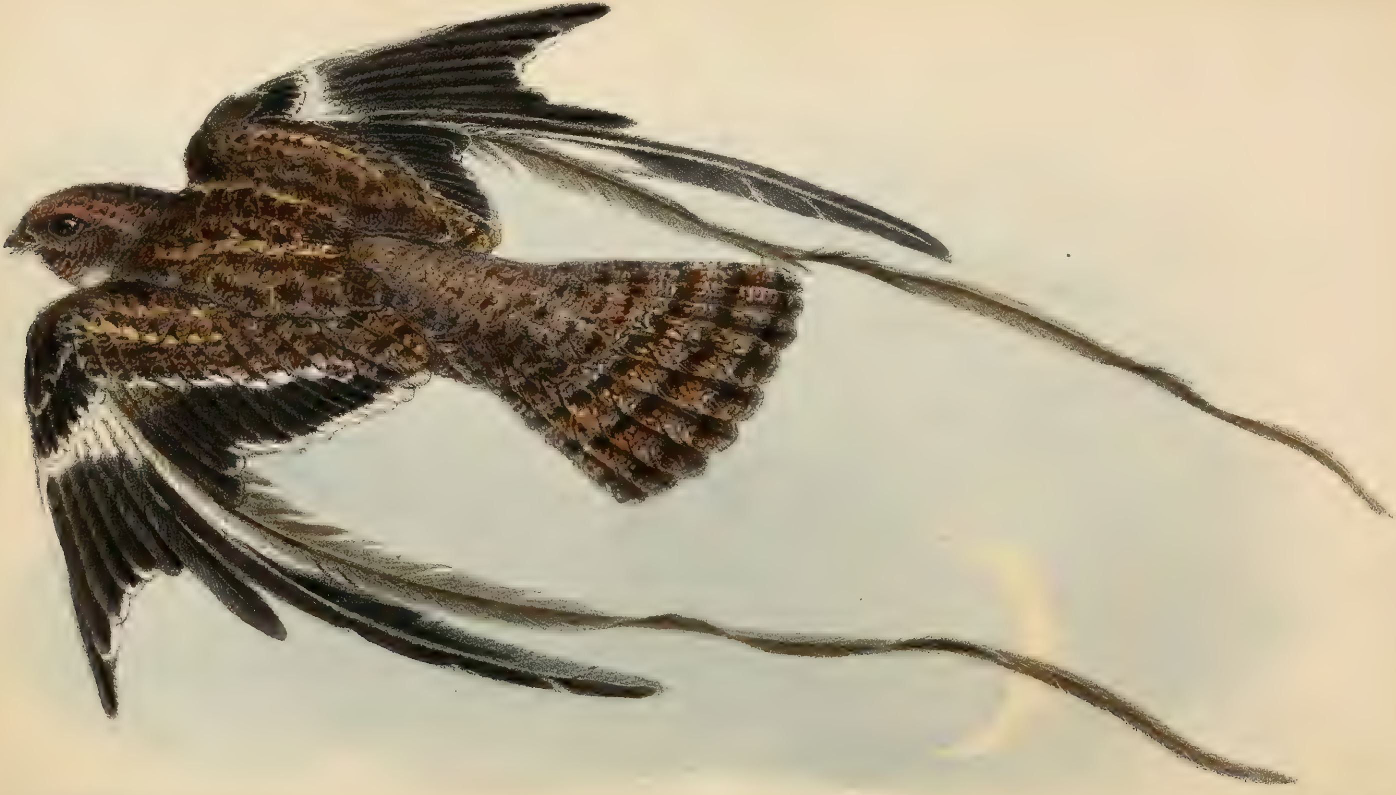
VIII.—*Note on the Caprimulgine Genus* Cosmetornis.

By P. L. Sclater, M.A., Ph.D., F.R.S.

(Plate II.)

In the second Number of his 'Icones Avium' Mr. Gould has figured a singular form of Goatsucker, with the inner primaries very much elongated, for which he has proposed the name *Semeiophorus vexillarius.* The term *Semiophorus,* having been previously employed in science, was subsequently altered by Mr. G. R. Gray into *Cosmetornis.* In the *Macrodipteryx longipennis* of Western Africa (a bird known since the days of Afzelius) the same remarkable peculiarity is exhibited by the male bird. But in *Macrodipteryx* the shaft of the elongated primary is denuded, and only terminated by a webbed extremity, whereas in *Cosmetornis* the elongated primary is webbed throughout its length. As, however, the general structure of these two forms closely agrees, they can only be considered as subgenerically different.

While *Macrodipteryx longipennis* is not an uncommon bird in cabinets of natural history, *Cosmetornis vexillarius* has hitherto but rarely made its appearance in European collections. There



J. Wolf. del. et lith.

M & N Hanhart imp.

COSMETORNIS VEXILLARIUS.

is one example of it in the British Museum, and another in Sir William Jardine's collection. The latter specimen was taken on board a vessel in the Mozambique channel; and, curiously enough, an example of this same species, presented to me by Mr. Edmund Gabriel, which I exhibited before the Zoological Society* in 1861, had been obtained in the same way in a ship off the west coast of Africa. Among the birds from the South African Museum, examined and reported upon by Dr. Hartlaub in the fourth volume of this Journal†, was likewise a young male example of this species, said to have been collected in Damara-land by Mr. Andersson.

My friend Captain J. H. Speke, during his recent successful expedition through Eastern Africa, met with this curious Goatsucker in Uganda, and brought home one not very perfect specimen, which forms the subject of the accompanying Plate by Mr. Wolf. I was at first inclined to consider Captain Speke's bird referable to a different local variety from the true *Cosmetornis vexillarius* of Mr. Gould, as, instead of the long "standard feather" being white all along the inner web, it is of a nearly uniform darkish brown throughout. But it would seem that Captain Speke's specimen is not quite adult, and that this feather (which is an ornament of the adult male) may probably change colour. Moreover, as Mr. Gould's type was obtained on the eastern coast of Africa, it is very improbable that two representative species should be found within the same area.

Captain Speke tells me that he shot this bird flying, after nightfall, at Urondogami, north of Lake Nyanza, in Uganda. He saw others flying backwards and forwards, and often alighting on the bare ground in the cleared patches near the villages, whence they flew off again when disturbed.

In the 'Annals of Natural History' for 1862 (vol. x. p. 445) Mr. G. R. Gray has described a second species of *Cosmetornis* from Western Africa, under the name *C. burtoni*. The single typical specimen of this species is in an imperfect state. It appears to differ from *Cosmetornis vexillarius* chiefly in the amount of white upon the primaries.

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* See P. Z. S. 1861, p. 44.

† See Ibis, 1862, p. 143.

IX.—*Recent Ornithological Publications.*

1. English Publications.

In our own country we have to welcome the appearance of the 3rd and 4th Parts of Mr. Gould's 'Birds of Great Britain,' in which the following species are illustrated:—

Part III.

Golden Eagle.
Sea-Eagle.
Nightjar or Goatsucker.
Great-crested Grebe.
Red-necked Grebe.
Eared Grebe.
Swallow.
Sand-Martin.
Great Spotted Woodpecker.
Lesser Spotted Woodpecker.
Green Woodpecker.
Nuthatch.
Land-Rail.
Water-Rail.
Meadow-Pipit.

Part IV.

Common Buzzard.
Snowy Owl.
Long-eared Owl.
Short-eared Owl.
Pallas's Sandgrouse.
Wren.
Golden-crested Wren.
Fire-crested Wren.
Common Snipe.
Great Snipe.
Summer Snipe.
Steller's Duck.
Goldfinch.
Common Sparrow.
Tree-Sparrow.

Of the merits of this great work we have already spoken in a former notice of the two first parts *. It will be observed that, in the case of the Eared Grebe, Mr. Gould has rightly rejected the specific term *auritus,* which Temminck misapplied to this bird, the true *Colymbus auritus* of Linnæus being, no doubt, nothing more than the *Podiceps cornutus,* or Sclavonian Grebe. The Eared Grebe of the South of Europe and Northern Africa (concerning the breeding of which Mr. Tristram has given us some details in a former volume of this Journal †) is correctly named *Podiceps nigricollis* (Gm.).

'Natural History and Sport in Moray, collected from the Journals and Letters of the late Charles St. John,' is the title of a volume recently ‡ published in Edinburgh, consisting "entirely of the observations and notes of Charles St. John," the author of a well-known and deservedly popular book, called 'Wild Sports of the Highlands.' "It is made up of entries in his journals and note-books, incidents in letters to his friends, and a careful description of the Birds of Moray which he left in MS. With these materials, hitherto unpublished, the substance of the 'Field Notes of a Naturalist,' which he published in 1849, has been incorporated."

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* Ibis, 1863, p. 102.

† Ibis, 1860, p. 159.

‡ Edmonston and Douglas, 1863.

We have to congratulate Dr. Jerdon upon the issue of a second portion of his 'Birds of India'—a work upon the general scope and object of which we have already spoken[*]. The present volume (which is called vol. ii. part i.) completes the account of the great Insessorial Order, embracing the conclusion of the *Merulidæ*, the *Brachypodidæ*, *Sylviidæ*, and *Ampelidæ*, and the Conirostres, in which group Dr. Jerdon includes three families —*Corvidæ*, *Sturnidæ*, and *Fringillidæ*.

We have not often occasion to refer to the Ornis of former geological epochs, although the birds of all time, as well as those of every country, must be embraced in the studies of the true ornithologist. But the extraordinary interest that attaches itself to the fossil bird of the lithographic slate of Solenhofen, which has recently become national property, leads us to say a few words on Professor Owen's memoir on this subject[†], which has been courteously communicated to us by the author.

The history of the *Archeopteryx* may be given in Professor Owen's own words:—

"The first evidence of a bird in strata of the Oxfordian or Corallian stage of the Oolitic series was afforded by the impression of a single feather, in a slab of the lithographic calcareous laminated stone or slate of Solenhofen; it is described and figured with characteristic minuteness and care by M. Hermann von Meyer, in the fifth part of the 'Jahrbuch für Mineralogie.' He applies to this fossil impression the term *Archeopteryx lithographica*;

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[*] See Ibis, 1862, p. 219

[†] "On the *Archeopteryx* of von Meyer, with the description of the fossil remains of a long-tailed species, from the lithographic slate of Solenhofen," by Prof. Owen, F.R.S., Phil. Trans. 1863.

and although the probability is great that the class of birds was represented by more than one genus at the period of the deposit of the lithographic slate, and generic identity cannot be predicated from a solitary feather, I shall assume it in the present instance, and retain for the genus, which can now be established on adequate characters, the name originally proposed for it by the distinguished German palæontologist.

"At the Meeting of the Mathematico-Physical Class of the Royal Academy of Sciences of Munich, on the 9th of November, 1861, Professor Andreas Wagner communicated the discovery, in the lithographic slate of Solenhofen, of a considerable portion of the skeleton of an animal, with impressions of feathers radiating fanwise from each anterior limb, and diverging obliquely in a single series from each side of a long tail.

"These and other particulars of the fossil Professor Wagner gave on the authority of M. Witte, Law-Councillor (Oberjustiz-Rath) in Hanover, who had seen the fossil in the possession of M. Häberlein, District Medical Officer (Landarzt) of Pappenheim.

"Upon the report thus furnished to him, Professor Wagner proposed for the remarkable fossil the generic name *Griphosaurus*, conceiving it to be a long-tailed Pterodactyle with feathers. His state of health prevented his visiting Pappenheim for a personal inspection of the fossil; and, unfortunately for palæontological science (which is indebted to him for many valuable contributions), Professor Wagner shortly after expired.

"I thereupon communicated with Dr. Häberlein, and reported on the nature and desirability of the fossils in his possession to the Trustees of the British Museum. They were accordingly inspected by my colleague Mr. Waterhouse, F.Z.S.; and an interesting and instructive selection, including the subject of the present paper, has been purchased for the Museum."

Archeopteryx, as is shown in the detailed examination of the fossil which succeeds its history, "differs markedly from all known birds in having two free unguiculate digits in the hand" resembling in this respect a Pterodactyle. But its chief interest centres in the excessive multiplication of the caudal vertebræ.

"In Bats there are short-tailed and long-tailed species, as in

Rodents, Pterodactyles, and many other natural groups of air-breathing Vertebrates; and it now is manifest that, at the period of the deposition of the lithographic slate, a like variety obtained in the feathered class. Its unexpected and almost startling character is due to the constancy with which all birds of the neozoic and modern periods present the short bony tail, accompanied in most of them with that further departure from type exemplified by the coalescence and special modification of the terminal vertebræ, to form the peculiar 'ploughshare-bone' supporting the coccygeal glands, and giving attachment to the limited number of fanwise radiating rectrices, constituting the outward and visible tail in existing birds. All birds, however, in their embryonic state exhibit the caudal vertebræ distinct, and, in part of the series, gradually decreasing in size to the pointed terminal one.

"In the embryo Rook the proper extent of the caudal vertebræ is shown by the divergence of the parts of the ilia to form the acetabula; and as many as ten free but short vertebræ are indicated beyond this part. Five or six of the anterior of these subsequently coalesce with each other and with the hinder halves of the ilia, lengthening out the sacrum to that extent. The tail is further shortened by the welding together of three terminal vertebræ to form the ploughshare-bone.

"In the young Ostrich from eighteen to twenty such vertebræ may be counted, freely exposed, between the parts of the iliac bones behind the acetabula; of which vertebræ seven or eight are afterwards annexed to the enormously prolonged sacrum, by coalescing with the backwardly produced ilia; while two or three vertebræ are welded together to form the terminal slender styliform bone of the tail, without undergoing the 'ploughshare' modification. In *Archeopteryx* the embryonal separation persists with such a continued growth of the individual vertebræ as is commonly seen in tailed Vertebrates, whether reptilian or mammalian.

"Thus," concludes Prof. Owen, "we discern, in the main differential character of the by-fossil-remains-oldest-known feathered Vertebrate, a retention of a structure embryonal and transitory in the modern representatives of the class, and a closer adhesion to the general Vertebrate type."

2. FRENCH PUBLICATIONS.

Messrs. Florent Prévost and C. L. Lemaire have published a volume * on the birds of Europe, which has, at all events, the merit of being cheap. We believe it to be only recently published; but there is no date on the title-page or anywhere else in the volume, that we can discover. Although called a history of the birds of Europe, and spoken of in the *avant-propos* as about to treat of more than 400 species, the volume deals only with the Insessorial birds, or Omnivores, Insectivores, Granivores, and Zygodactyles and Anisodactyles of Temminck's arrangement. But no second volume is announced. The most novel thing we can find in it is the following truly French story of a Common Swallow:—

"On dit qu'un cordonnier du Bâle, ayant mit à une Hirondelle de fenêtre un collier sur lequel était écrit—

'Hirondelle, qui est si belle,
Dis-moi l'hiver où vas-tu?'

reçut le printemps suivant, et par le même courier, cette réponse à sa demande—

'À Athènes, chez Antoine.
Pourquoi t'en informes-tu?'"

Even this, though amusing, has not, we fear, the merit of truth in its favour.

3. GERMAN PUBLICATIONS.

The second part of Wiegmann's 'Archiv' for 1863 contains the termination of Philippi and Landbeck's "Beiträge zur Fauna von Peru," to which we referred in our last Number. Their new species *Leistes albipes* is closely allied to *Sturnella militaris* (at least we suppose this to be the species indicated by Philippi under the name *Leistes americanus*), and in all probability identical with *S. bellicosa,* De Filippi, which we have received in collections from Ecuador. A third species of the group is *S. defilippii* from La Plata, easily distinguished by its black under-wing-coverts.

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* 'Histoire Naturelle des Oiseaux d'Europe,' par Florent Prévost et C. L. Lemaire. 1 vol. 8vo, Paris, 80 coloured plates, price 25 fr.

Recurvirostra andina (capite colloque albis: pallio, alis et cauda nigris: pedibus plumbeis), from Arica in Peru, seems to be a good new species of Avocet. The existence of an Avocet in South America has already been noted by Rengger (Reise nach Paraguay, p. 225) and A. d'Orbigny (Voy. pt. ii. p. 317), but this is, so far as we know, the first time the species has been identified.

Dasycephala albicauda is obviously an *Agriornis* allied to *A. livida* and *A. maritima*—two Chilian species, concerning the habits of which some good remarks are given subsequently (p. 136). Messrs. Philippi and Landbeck are, however, quite wrong in referring these birds to *Dasycephala,* that name of Swainson being synonymous with *Attila* of Lesson, and having for its type the *Muscicapa cinerea* (Gm.)—a more or less terrestrial bird of the forests of Brazil, very different in habits from the *Agriornithes* of the Andes and of the coasts of Chili and Patagonia.

A second paper by Messrs. Philippi and Landbeck, in the same Number of the 'Archiv,' gives a very interesting account of the four species of Geese found in Chili*. These are, according to Messrs. Philippi and Landbeck, *Bernicla melanoptera* (Eyton), *B. dispar,* sp. nov., *B. chiloensis,* sp. nov., and *B. antarctica* (Gm.).

Bernicla melanoptera, which is the "*Piuque*" of the Chilians and the "*Huacha*" of the Peruvians, is stated to inhabit the small lakes in the Cordilleras of Chili, at a height of 10,000 feet above the sea-level, and to breed there in pairs. In winter the families descend into the lower marshes. This Goose extends northwards from Chili into Bolivia and Peru. The sexes are alike, the female being, however, smaller in size.

This species, we may remark, is well figured in the 'Zoology of the Voyage of the Beagle,' Aves, pl. 50. There are five examples of it in the British Museum, amongst which is Eyton's type-specimen, and one from Lake Titicaca, Bolivia, obtained by Mr. Pentland.

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* "Ueber die Chilenischen Gänse," *ibid.* p. 185.

Bernicla dispar, Philippi et Landb., sp. nov., which is the "*Gansillo*" of the Chilians, is stated to be common near Santiago in winter, and to breed in the middle provinces of Chili, on the Cordilleras, descending into the plains in winter. It is figured by Cassin in the 'Zoology of the United States Naval Astronomical Expedition' (pl. 24) under the name *B. magellanica*.

We believe Messrs. Philippi and Landbeck to be quite right in separating this bird from the true *B. magellanica*, in which the male is unspotted white below. There is a Chilian bird in the British Museum exactly corresponding with their description, except that the rectrices are all black. *B. magellanica* vera is found in the Falkland Islands, whence the Zoological Society of London obtained the specimens which now breed in their Gardens every year. It extends, however, over the southern part of South America, one example, marked "Chiloe," being in the British Museum.

Bernicla chiloensis, Messrs. Philippi and Landbeck's third species, is stated to be very common in the Island of Chiloe, where it is called "*Canquen*"; but also occurs as far north as Valdivia, from February to April. Our authors are quite correct in considering this species as distinct from the *Anas inornata* of King, although it is the bird figured in Mr. G. R. Gray's 'Genera of Birds' under that name, and has also been called by Gray *Bernicla inornata*. But it was not necessary to propose a new name for this unfortunate Goose, as it has also been called *poliocephala* by Mr. Gray in his Catalogue of the specimens of Anseres in the British Museum, and has long been well known as the Ashy-headed Goose (*Chloëphaga poliocephala*) in all the Zoological Gardens of Europe.

Bernicla antarctica (Messrs. Philippi and Landbeck's fourth species of Chilian Goose) appears in Chili only in winter, being occasionally found in the harbours of Corral and Arique, in the province of Valdivia. It is singular that while in this species, as in *Chloëphaga dispar* and *C. magellanica*, the sexes are so differently coloured that they run the risk of being considered different species, in *C. poliocephala* and *C. melanoptera* the male cannot be distinguished from the female except by size. This is likewise the case with *Chloëphaga rubidiceps* of the Falkland Islands, which is closely allied to *C. poliocephala.*

A third paper* by the same writers, which follows the last, gives descriptions of a new Duck (*Querquedula angustirostris*), obtained by the deceased Herr Frobeen in Peru, and of a new Tern (*Sterna atrofasciata*) from the province of Colchagua, in Chili. The former species is stated to be allied to *Q. oxyptera*; but the affinities of the latter are not given.

The same Number of the 'Archiv' contains the commencement of an article, by Dr. A. Böcking, on the American *Rhea*†. The account of the habits of this bird seems to be very full and complete; but Dr. Böcking can never have seen a specimen of *Rhea darwini*, nor even, we should suppose, have read a description of it, or he could scarcely have called it a climatic subspecies of *R. americana.* Many generally recognized genera do not possess the strong characters that separate the former species from the latter and distinguish them in every stage from the egg upwards.

Herr Aug. von Pelzeln has lately commenced to publish, in the 'Verhandlungen' of the I. R. Zoological and Botanical Society of Vienna, a catalogue of the very fine series of *Vulturidæ* and *Falconidæ* in the I. R. Cabinet‡. The arrangement followed is nearly that of Gray: the recent synonyms, since the publication of the 'Genera of Birds,' are given very fully. The first part contains the Vultures and *Polyborinæ, Buteoninæ,* and a part of the *Aquilinæ.* The second part contains the completion of the catalogue of *Aquilinæ* and the *Falconinæ.* A third and concluding part, promised to appear shortly, will treat of the remaining subfamilies *Milvinæ, Accipitrinæ,* and *Circinæ.* Extracts from the late Johann Natterer's notes on many of the species are appended.

This catalogue is a most important contribution to our know-

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[*] "Beschreibung einer neuen Ente und einer neuen Seeschwalbe," *ibid.* p. 202.

[†] "Monographie des Nandu oder sudamerikanischen Strausses (*Rhea americana*)," *ibid.* p. 213.

[‡] "Uebersicht der Geier und Falken der kk. Ornithologischen Sammlung." Von Aug. v. Pelzeln. Verh. kk. Zool. Bot. Gesellschaft, 1862.

ledge of the Accipitres. The Vienna collection seems to be particularly rich in this order of birds. The former Custos, Johann Natterer, was not only a most diligent collector personally during his long travels in the different parts of the Brazilian empire (where he is stated to have obtained examples of 1000 species of birds), but also purchased largely in London and other places. There have been also many valuable specimens recently obtained from Heuglin, Kotschy, Ida Pfeiffer, and others.

4. DUTCH PUBLICATIONS.

Professor Schlegel has commenced the publication of a new illustrated work* on the birds of the Dutch possessions in the East Indies, of which we have seen one part. This embraces the genus *Pitta*,—the plan being to issue monographs of the different genera that have been worked out in the National Museum at Leyden, and so render the work an illustrated companion to the catalogue of the birds of that establishment given in the 'Revue Méthodique des Collections du Musée des Pays-Bas.' The work is intended to extend to about 100 plates, containing more than 800 figures, and to be completed in about five years. The principal portion of the text is in Dutch; but a *revue synoptique* of the species, in French, is appended. The figures are on a reduced scale. They are well executed, as we need hardly say, being drawn by Professor Schlegel himself, but perhaps not quite so carefully coloured as might be; but then the low price of the work must be taken into consideration.

The third livraison of the 'Revue Méthodique des Collections du Musée des Pays-Bas'† contains the conclusion of the "*Buccones*," by Lieut. A. Goffin; and lists of the "*Ardeæ*" and "*Alcedinides*," and the first portion of that of "*Merops*," by Professor Schlegel. Under the head of "Buccones" two very distinct families are united, namely the true *Bucconidæ* and the *Capitonidæ*. These groups differ not only in external form, but also in internal structure and in habits. The error of uniting them was first pointed out by Dr. Cabanis, and has since been commented upon by Professor Burmeister, by ourselves, by Mr. Wallace, and by other writers. The *Capitonidæ* are closely allied to the Toucans in habits and structure. Like them, they have but ten tail-feathers, and the furcula imperfect at the junction of the rami. The *Bucconidæ,* on the other hand, are essentially allied to the Trogons and Jacamars, with which indeed they are united by Burmeister into one family.

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* De Vogels van Nederlandsch Indie, beschreven en afgebeeld door H. Schlegel. Haarlem, Kruseman, 1863, 4to, part i.

† See Ibis, 1863, pp. 105 et 358.

The *Ardeæ* are divided by Professor Schlegel into sections which correspond to the different generic groups of most modern writers. If Prince Bonaparte, who published the last account of these birds in the second part of his 'Conspectus,' made too many species, Professor Schlegel cannot certainly be said to have erred on this side, and we think Professor Schlegel without doubt the more nearly right of the two. But we wish he had indulged us with *Latin* titles for the different sections of his *Ardeæ,* instead of terming them "Petits Hérons," "Aigrettes," &c.

In the "Alcedines," p. 43, we observe it stated somewhat positively as regards *Tanysiptera,* "On ne connaît jusqu'aujourd'hui que quatre espèces de ce petit groupe." Had Professor Schlegel seen Mr. Wallace's rediscovered *T. nympha* (P. Z. S. 1862, p. 165), he would hardly have said this; and in our opinion, if four species are to be allowed of the genus, we must admit all the nine, as given by Mr. Wallace (P. Z. S. 1863, p. 24).

5. AMERICAN PUBLICATIONS.

The Report of the Smithsonian Institution for 1861 contains a paper by Mr. E. Coues and Mr. D. W. Prentniss on the birds of the District of Columbia*. The list enumerates 226 species as being met with in this locality, of which only forty-four are "permanent residents." There are likewise forty-four "winter residents," *i. e.* species breeding further north, and fifty-nine "summer residents," *i. e.* species which resort to the District for the purpose of breeding there; the "spring and autumn visitants" are fifty-four; and those of accidental occurrence, twenty-five. We extract two passages from Messrs. Coues and Prentniss's general remarks on the Columbian avifauna:—

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* "List of Birds ascertained to inhabit the District of Columbia, with the times of arrival and departure of such as are non-residents, and brief notices of habits, &c.," Smiths. Rep. 1861, p. 399.

"Though the number of birds which are resident throughout the year and those which breed here is considerable, they are few in comparison with those which pass through during their spring and autumn migrations and remain for a longer or shorter time each season. The number of species, indeed, is not greater, but the individuals of each are very numerous. It is on this account that for a month or so during the spring and autumn (from about the 20th April to the 20th May, and from the 1st September to the middle of October) the collector is so amply repaid for his pains, while at other times ornithologizing, except for some particular birds, is hardly worth the time and trouble. So numerous, indeed, are individuals of most of the migratory species, that at the height of the season in spring we have collected in a walk before breakfast from forty to fifty specimens of various species of Warblers, Thrushes, Flycatchers, Finches, &c. As an instance of the number of birds which pass through the District on their way north to breed, compared with those which remain with us during the summer, may be cited the Wood-Warblers, or *Dendroicæ*. Of the twelve or thirteen Wood-Warblers found more or less abundantly in the spring and fall, only three are known to breed here. The same might be affirmed of other birds, as the Thrushes, Flycatchers, Sandpipers, &c. * * * *

"A circumstance which has considerable influence on the appearance of birds in the immediate vicinity is the presence of a large city. This is most strikingly shown in the case of the Ducks and other water-fowl, to which the attention of the sportsman is especially directed. The peculiar character of Chesapeake Bay and its tributaries renders them the favourite winter resort of nearly all the species of *Anatidæ*; but the incessant persecutions to which these birds are subjected have effected a material diminution of their numbers, and caused a great part of them to retire to the bogs and inlets of more southern shores. The same is true, though less markedly, of various shy and solitary birds (as for example the *Hylotomus pileatus*), which are gradually retiring with the clearing up of the forests to more mountainous and inaccessible regions. Nevertheless the pertinacity with which some birds hold their ground is surprising. Thus the common Partridge, though so continually persecuted by sportsmen, is still very numerous even in the immediate vicinity of the city. A total change of habit by civilization, sometimes to be observed, is extremely interesting. There can be no doubt that, before the settlement of the country, the *Chætura pelasgia* bred in hollow trees. This habit is now totally lost, the bird finding chimneys better suited to its wants. In like manner, the *Hirundo horreorum* now breeds altogether on the rafters and beams of barns and outhouses, while the *H. lunifrons* is gradually abandoning the sides of cliffs for the convenient situations afforded by the projecting eaves of buildings. The *Progne purpurea* always gives preference to the boxes now everywhere placed for its accommodation."

In a new paper in the Philadelphian Academy's Proceedings* Mr. Coues completes his review of the North American *Laridæ*, treating of the third section of the Skuas, but embracing in his remarks, on this occasion, all the known species of the group. As in the case of former papers, Mr. Coues adopts ante-Linnean names for both genera and species, and thereby seeks to introduce what we consider objectionable changes into their nomenclature. Mr. Coues divides the Skuas into two genera, for the first of which, containing the *Larus catarractes* of Linnæus, and its (barely separable) southern representative, *Stercorarius antarcticus*, he uses Mœhring's term *Buphagus* (!); for the second, *Stercorarius* of Brisson. Of the latter group six species are enumerated, viz.,

1. *S. pomarinus* (Temm.) ex Eur. et Am. Sept.
2. *S. parasiticus* (Linn.) ex Eur. et Am. Sept.
3. *S. richardsoni* (Sw.) ex Am. Arct.
4. *S. hardyi* (Bp.) ex oc. Pacif. (?)
5. *S. spinicauda* (Bp.) ex oc. Atlant. (?)
6. *S. buffoni* (Boié) ex Eur. et Am. Sept.

Stercorarius richardsoni, we may remark, has been usually considered the same as the true *S. parasiticus* of Linnæus and Brünnich. But Mr. Coues has discovered several specimens of Skuas from Arctic America in the Smithsonian Institution which "agree minutely" with Swainson's plate and figure, and appear to possess differential characters* which indicate the existence in Arctic America (of a second Skua) allied to *S. parasiticus*. With regard to the fourth and fifth species, we believe them to be pure figments, like many other "species" manufactured during the declining hours of the late Prince Bonaparte.

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* Proc. Acad. Philad. 1863, p. 121, "On the *Lestris richardsoni* of Swainson, with a critical review of the subfamily *Lestridinæ*."

Professor Baird has commenced publishing in the same Academy's Proceedings some "Notes on the Birds of Jamaica, by W. L. March," who has been collecting in that island for the Smithsonian Institution. The present portion refers to the Accipitres and *Cuculidæ*. Among the former is *Cathartes atratus*—a "recent settler in Jamaica," not known to Mr. Gosse.

Mr. Lawrence has kindly forwarded to us a new part of his catalogue of the birds collected in Panama by Mr. J. McLeannan, containing additional species, and notes and remarks on former published species†. The total number of species obtained by Mr. McLeannan, who is, we believe, superintendent at one of the stations of the railway, amounts now to 415. *Petrochelidon albilinea*, Lawrence, we suppose to be the same Swallow as that recently described by Mr. Salvin‡ as *P. littorea*.

X.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters addressed "*To the Editor*":—

Porto S. Giorgio, September 12, 1863
(Italy, Marche).

Before reading, in the last Number of your periodical (July 1863), Mr. H. B. Tristram's observations on what I had previously written about the Birds of Mount Vetore, which I had taken for Snow Buntings (*Plectrophanes nivalis*), I had already obtained some specimens thereof, when I found they were in reality the Snow Finch (*Montifringilla nivalis*, Brehm), thus removing the conclusion I had originally been led to form (in the absence of a near sight of the bird), upon the assertions of sportsmen on the spot, that the bird in question had the claw of the hind toe rather long.

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* "Major; rostro, tarsis alisque longioribus; cauda magis producta et rotundata, rectricibus latioribus" (*l. c.* p. 135).

‡ "Catalogue of a Collection of Birds made in New Granada, by James McLeannan, Esq., of New York, with Notes and Descriptions of New Species." Pt. 4. Ann. Lyc. Nat. Hist. New York, vol. viii. (May 1863).

† P. Z. S. 1862, p. 189.

It is strange that even Prince L. Bonaparte entertained a like erroneous opinion, as shown in his work entitled 'Specchio comparativo delle Ornitologie di Roma e di Filadelfia,' Pisa, 1827, where he states (p. 46) that the *Emberiza nivalis*, Linn., "probably inhabits also our Apennines, and is abundant on the Mount Cenis," while, without doubt, he was mistaken in both assertions, since, according to Savi, they do not exist even on the latter mountain (Ornitologia Toscana, vol. ii. p. 116), though the Snow Finch is found in both places.

I have deemed it well to say thus much in order that your readers should not be led into error by my first conjecture.

Yours, &c.,

Dr. Thomas Salvadori.

Lyon, le 27 Octobre, 1863.

Monsieur,—Le fait ornithologique le plus remarquable de notre époque est, sans contredit, l'apparition dans nos contrées du *Syrrhaptes paradoxus*. Après avoir envoyé, pour ainsi dire, des émissaires isolés en Occident, cette espèce s'y est montrée ensuite par bandes nombreuses, et cela non seulement en France, mais encore en Allemagne, où sa présence a été constatée un assez grand nombre de fois. Le Docteur Altum, dans un mémoire intéressant qui vient de paraître dans le 'Journ. für Ornithologie,' cite encore d'autres localités visitées par l'Hétéroclite. D'après cela, ne serait-on pas fondé à admettre, à titre de conjecture, que cet oiseau tendrait à se déplacer à l'exemple de quelques autres, qui sont devenu rares dans les pays où on les trouvait communément ?

Dans son dernier mémoire, le Docteur Altum rapproche des Outardes le genre *Syrrhaptes*, opinion que j'avais déjà émise il y

a quelques années (Voy. Naumannia, t. v. p. 312, et t. vii. p. 177), en parlant des Gangas.

Je regrette seulement, ainsi que M. Altum, de n'avoir pas eu à ma disposition des squelettes de Gangas et d'Outardes, dont la comparaison aurait fourni de nouveaux caractères pour rapprocher ces familles, que l'on a jusqu'à présent éloignées les unes des autres. A défaut, M. Altum démontre anatomiquement l'erreur de ceux qui rapprochaient les Ptéroclides des Pigeons.

Je terminerai ces quelques lignes en exprimant le désir de voir réaliser l'acclimatation de cette jolie espèce parmi nous. On ne voit pas pourquoi elle ne pourrait pas trouver dans l'Europe occidentale des conditions d'existence aussi favorables que dans les déserts de l'Asie; mais il est fort à craindre que des nuées de chasseurs ne lui fassent payer cher l'hospitalité qu'elle est venu nous demander, et ne forcent les survivants à chercher une autre patrie.

Veuillez agréer mes salutations respectueuses,

LEON OLPH-GALLIARD.

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26 Charlotte Street, Bedford Square,
Nov. 30, 1863.

SIR,—I have just received from my friend Ed. Hearle Rodd, Esq., of Penzance, the following letter relating to the capture of a second species of *Muscicapa parva*; and conceiving this communication worthy of a place in 'The Ibis,' I forward it for insertion in the next Number. The specimen appears to be a male of the year, which might or might not have been bred in our island.

Yours, &c.,

JOHN GOULD.

Penzance, Oct. 27, 1863.

MY DEAR SIR,—You were kind enough to make a very early communication to me respecting the capture of the first specimen of the *Muscicapa parva* in Britain, and gave me valuable particulars of its characters, &c. I feel it due to you, therefore, to receive from me a second example which has now come under my notice. This has been forwarded to me, or rather to Mr. Vingol with a message to me, by my nephew and Mr.

Augustus Pechell, who are staying with Mr. Smith for the Snipe- and Woodcock-shooting which the Scilly Islands afford at this season of the year. These gentlemen are good observers of birds, and have been watching the arrival of the great autumnal flight of small birds, consisting of Blackbirds, Thrushes, Larks, Snow Buntings, Chaffinches, Hawfinches, Willow-Wrens, and other soft-billed members of our *Sylviidæ*.

On Friday last Flycatchers appeared; and two apparently young Pied Flycatchers (a species almost unknown as Cornish, except just *in statu migratorio*), and a third, which from its size and tone of colour was thought to be a Chiffchaff, were obtained. The character of the exterior four tail-feathers, showing white in their basal halves, drew their attention to the bird, and it was fortunately forwarded for identification. This proves to be a veritable *M. parva*, differing only from the female skin you were good enough to make me a present of in the under-plumage presenting a tinge of buff-brown, particularly on the sides of the breast, whereas in the specimen I have from you these parts are of a uniform silvery light grey approaching to white. The tips of the wing-coverts are in the present bird edged with a lighter (or rather more reddish) brown than the rest of the upper plumage, and the latter has a more decided tone of brown than my stuffed specimen. This leads me to offer you my opinion that the bird is an immature male; the buff-coloured breast, &c., agreeing with one of those laws which appear to regulate the tone of colour in birds presenting sexual differences when adult. It must be here remarked that this bird was in company with the young Pied Flycatchers, and exhibited the gestures and habits of the *Muscicapidæ* in abrupt flights, &c.

Yours, &c.,
EDWARD HEARLE RODD.

Magdalene College, Cambridge,
December 1, 1863.

SIR,—The "Notes on the Ornithology of Iceland," contributed by me to Mr. Baring-Gould's recent work, hardly deserve, I fear, the praise which you have been kind enough to bestow on them (Ibis, 1863, p. 465). Although I had long been collecting materials for a paper on the subject, I found myself called upon to complete it sooner than I expected; and being thus pressed for time, I unfortunately omitted at the last to apply in various quarters for the information which alone could render it what you are pleased to term "an exhaustive *résumé* of the present state of our knowledge." Permit me, therefore, through the medium of your Journal, to make some additions to the list of Icelandic Birds.

In the first place let me mention that Mr. G. G. Fowler informs me that, in 1862, he shot a female Gadwall (*Anas strepera*) at Myvatn as she rose from her eggs, two in number; and, the day after, he killed a fine drake near the same spot. I also learn from Mr. Proctor that he has once or twice received skins of this bird direct from Iceland. As the testimony in each case is indubitable, the species must no longer be subject to suspicion.

Next, I am glad to be able to speak with greater confidence respecting the species of large Geese which occur in Iceland. Mr. Fowler has kindly sent me the head of one he shot in the north. This is certainly that of *Anser ferus*. He states that it was with a brood of young, and that he was shown the place where it had hatched. Mr. Proctor also tells me that he has had three or four examples of this species, and as many of the Bean Goose (*Anser segetum*). But, more than all, he has once or twice received the Pink-footed Goose (*Anser brachyrhynchus*) from Iceland. One of these specimens he lately showed me in the Museum of the University of Durham, and he assured me that with it were sent some eggs, of which it was stated to have been the mother.

Mr. Proctor further tells me that a single specimen of the Long-eared Owl (*Otus vulgaris*) has been sent him from Iceland, and that he has once or twice received thence the Pigmy Curlew (*Tringa subarquata*), on two occasions the Ivory Gull (*Pagophila eburnea*), and, once, two examples of the Northern Puffin (*Fratercula glacialis*). The latter, which he believes to have been obtained on the island of Grimsey, are now in Mr. Tristram's collection. All these four species have been hitherto unrecorded as Icelandic.

From the same excellent authority, I find that the Starling (*Sturnus vulgaris*) has certainly been met with two or three times in Iceland—a fact which renders it probable that Gliemann was not, as I had supposed, mistaken in saying that it had occurred there.

I am also reminded, by a notice of Mr. Baring-Gould's work in a recent Number of the 'Annals and Magazine of Natural History' (ser. 3. vol. xii. p. 397), that the late Etatsraad Reinhardt mentions (Vidensk. Selsk. Afh. vii. p. 96) that, in the beginning of the summer of 1824, a flock of ten or twelve Glossy Ibises (*Falcinellus igneus*) were observed on the southern extremity of Iceland.

I am, Sir,
Yours obediently,
ALFRED NEWTON.

November 30, 1863.

SIR,—Reading in 'The Ibis' of last year the review of the Memoir of Bewick, I observe a list given of his works. I bought at a sale the other day a book called 'A New Family Herbal,' by Robert John Thornton (published by Richard Phillips, Bridge Street, Blackfriars, London, 1810), in which the plants are stated to be "drawn from nature" by Henderson, and "engraved on wood by Thomas Bewick." This forms, I fancy, an addition to your list of his works.

Yours, &c.,
J. W. P. ORDE.

A letter addressed to the Editor by Mr. E. L. Layard (dated Cape-town, September 18th) mentions that the writer had lately seen at Simons Bay, in the possession of Lady Walker, the wife of Admiral Sir Baldwin Walker, living specimens of two very interesting species of Guinea-fowl from the eastern coast of Africa. These were *N. vulturina*, brought from the east coast, a little northwards of Zanzibar, and *N. cristata* (?), of which the exact locality had not been ascertained. [The eastern form of *N.*

cristata is *N. pucheranii,* Hartl.] Mr. Layard continues as follows:—

"Nearly all our Swallows and Swifts are come. *Hirundo rustica* arrived September 1st; on the 2nd, *Cypselus leucorrhous*; on the 5th, *C. apus*; 13th, *H. capensis*; and today (18th), *C. alpinus* and *C. apus* in thousands. The two still wanting are *H. paludicola* and *H. rubrifrons.* These are probably in the colony, but have not yet fallen under my notice. *H. paludicola* is generally the first to come. The little black *H. holomelas* was at the Knysna three weeks ago."

In fulfilment of the design announced in our last Number, Mr. Tristram left England for Palestine early in October last, and the various members of his expedition departed by different routes about the same time, Malta being the point of reunion. The party consists of Messrs. H. B. Tristram, W. C. P. Medlycott, G. G. Fowler, and H. M. Repcher. They have secured the services of Mr. H. Bowman as photographer, Mr. E. Bartlett as zoological collector, and Mr. B. T. Lowne as surgeon and botanical collector.

The plans of the expedition are to devote November and December to the country from Beirut to Jerusalem, taking the coast-line to Carmel, and thence working zigzag through the less-frequented mountains and wooded country of Ephraim.

January and February they give to the shores of the Dead Sea and the Southern Ghor. They will endeavour especially to get quite round the Dead Sea, close to its eastern shores, to note its geology, and to take as many photographs of it as possible. All the little streams which run into this lake will be carefully explored for zoology and botany.

March, April, and beginning of May they allot to the Northern Ghor and to the course of the Jordan from Jericho up to Tiberias. Nesting will come in on the wooded banks of the Jordan; and they hope to visit Heshbon Essalt (Ramoth Gilead), and to explore, as far as possible, the Land of Gilead and Bashan. The Sea of Galilee will come in in the beginning of May, and particular attention will be paid to its fishes.

After that, they propose to pass by the Waters of Merom, and to try to ascend the top of Hermon. Thence they descend to Damascus, spend July in the Lebanon, and return home *viâ* Beirut.

Mr. Tristram has already forwarded to us the following notes made in Central France, where he spent a few days, *en passant*, in order to study the geology of the volcanic district of Auvergne :—

"Our journey through France has proved that the decree of the Emperor in favour of small birds has not yet been productive of any great improvement in their condition. A Kittiwake, two Hooded Crows, a barren Grey Partridge, and a few parties of Magpies were the visible bird-population from Boulogne to Paris. Arrived at Clermont, the poulterers' shops revealed very plainly the fact that the Passerine birds have small chance of safety unless the gastronomic taste of the people be changed. The stock in the principal shop of this town of 40,000 inhabitants consisted of a few Hares and Rabbits, one Alpine Hare, two brace of Grey and three brace of Red-legged Partridges, upwards of a dozen Ring-Ouzels, a few Thrushes and Blackbirds, two Tree-Sparrows, some Yellow Wagtails and Crested Larks, three Cirl Buntings, nineteen Great Tits, nearly thirty Blue Tits, and four or five Cole-Tits.

"We made an expedition to the summit of the Puy de Dôme, 4850 feet high. On the way we observed the Cirl Bunting taking the place of our Yellow Hammer, and several Yellow Wagtails apparently on their migration. At the foot of the mountain is a little cabaret, closed for the season ; and here an excited chasseur, who had had the good fortune to secure two Alpine Hares among the stunted hazels on the mountain-side, in his paroxysm of delight rejected the previous contents of his bag, consisting of a Cole-Tit, which I picked up and skinned as a souvenir. Arrived at the summit, the only signs of bird-life were a solitary Kestrel, a Tithys Redstart, and a lonely Rock-Sparrow (*Petronia stulta*), which sat Wheatear-like on its rocky perch, giving forth its monotonous note in the confidence that the ascent of the mountain was too fatiguing even for the most ardent chasseur.

"On our next day's expedition we discovered that both *Petrocincla rupestris* and *Tichodroma muraria* inhabit the environs of the town. M. Le Coq, one of the principal inhabitants, has a first-rate collection both of the birds and eggs of Europe; indeed I have never seen a cabinet richer in carefully selected series of southern forms of the latter. Although far from perfect in northern species, it is well worth a visit from any ornithologist. His collection of birds contains eight specimens of *Gypaëtus barbatus* from the Pyrenees, and I noticed that they are of a much deeper colour on the breast than those from the Atlas.

"Arrived at Marseilles, in the course of a long ramble on the heights beyond the city, two Tithys Redstarts were the sole contribution we could have made to an ornithological census. I think it is Victor Hugo who somewhere describes a chasseur of Marseilles as so delighted by the sight of a Blackbird that he pursues him in vain for a fortnight into the centre of France. Such enthusiasm today must needs have been latent. Yet, returned to our hotel, we found that there was actually 'gibier à la carte;' for two Thrushes were marked at three francs. My friend could not but inquire after them, and extracted from the *garçon* the humiliating confession that even at that price the 'grive' had but a paper existence. Having two days on hand, we started on a geological expedition twenty-five miles to the east. We met with few birds on the mountain-sides, but those we did see were full of interest. *Sylvia melanocephala* and *S. passerina* were to be seen in the hollows; *Ruticilla tithys* now and then among the rocks; and occasionally *Tichodroma muraria*, with his singularly shaped oblong heavy wings, against the cliff-side, responding in a low treble to the harsh wail of *Petrocincla cyanea* on the heights above him. Of large *Raptores*, even in this mountainous district of Cassis, we did not see a vestige."

We are again compelled, from the same reason as before, to delay the promised article on the invasion of *Syrrhaptes*.

THE IBIS.

No. XXII. APRIL 1864.

XI.—*List of the Birds observed in the Islands of Malta and Gozo.* By Charles A. Wright.

[Concluded from page 73.]

138. Columba palumbus. (Wood Pigeon.)

Tudun, Maltese.

Passes in April and May, and again in September, October, and November. Never seen in great numbers. Does not breed here, doubtless owing to the want of woodlands.

139. Columba œnas. (Stock Pigeon.)

Also called *Tudun,* in Maltese.

Spring and autumn. Does not breed in the island.

140. Columba livia. (Rock Pigeon.)

Hamiem-tal-gebel, Maltese.

Sedentary in the rocks and precipices of the southern coast of Malta and Gozo, and on the rocky islet of Filfla, where it breeds in considerable numbers. The young birds fly in June, when (the Quail season being over) the sportsmen amuse themselves by pursuing them in boats. In July their numbers get pretty well thinned; probably a good many then leave us, owing to the difficulty of finding a sufficiency of food. As examples of escaped Domestic Pigeons are to be seen breeding in the same localities, crosses doubtless often occur.

141. Columba turtur. (Turtle-Dove.)

Gamiem, Maltese.

Passes in large flocks in April and May, when great numbers are caught in platform-nets. Hooded decoy-birds, which are sometimes kept for six or eight years, are used to entice the wild ones into the nets. This sport is a favourite amusement with the country gentry; and in most of the *casals*, or villages, the village priest, whose occupations and duties afford him an abundance of idle time, pursues it with great assiduity. The manner in which the Doves are taken is as follows:—A spot is chosen, generally on the summit of a hill over which it is ascertained from experience the birds are accustomed to pass. This spot is laid out with flat stones over an area of (say) 24 feet by 8 or 9, so that the nets, in turning over, may lie flat. The nets are laid, and fastened to the ground, one on each side of this platform. Two hooded birds are placed at one end, in a depression, in order that they may be perfectly free of the nets when they are pulled over them. They are fastened by the leg to a piece of wood, moving on a hinge, so that by pulling a string the bird can be raised gently in the air and exposed to the view of passing flocks. It is generally the custom to post two or three birds, hooded and secured in like manner, as outsiders, on raised heaps of stones, to render them more conspicuous objects of attraction. When the Doves are seen approaching in the distance, one or more of these distant decoys are first raised and let down, and afterwards the others. Twenty or thirty Doves, and upwards, are frequently caught in this way at one haul. Great care and attention are requisite in keeping the decoy-birds from one year to another, as the success of the deception depends very much on the plumage being as perfect as possible. Instances of *Columba turtur* breeding in captivity, and also of its crossing with *C. risoria*, are known, but such occurrences are rare. From time to time it has been observed to breed in Gozo in a wild state. As an illustration of the great power of flight of these birds, it may be mentioned that thousands of them may annually be seen passing over the island without alighting. In September they reappear on their way from Europe, but are not generally so plentiful then as in spring. At this time they consist chiefly of birds of the year, which want the collar, so conspicuous a feature in the adult, and are altogether of a duller hue.

Mr. E. Newton writes to 'The Ibis,' in August 1859, dated during his voyage down the Red Sea, as follows:—"Altogether I have seen a good many birds *between Malta and Alexandria*;" and amongst the rest he notices having observed *Turtur risorius*. Is not *Columba turtur* here intended? Or if that accurate observer saw *T. risorius*, is it not more likely to have been when passing down the Red Sea, where, with *T. ægyptiacus*, *T. risorius* takes the place of *Columba turtur*? *T. risorius* is not included in European lists, and does not usually appear so far north as the Mediterranean, which sea *Columba turtur* annually crosses twice in its migrations from Africa to Europe, and *vice versâ*.

142. PTEROCLES ALCHATA. (Pintail Sandgrouse.)

Schembri records the capture of several examples at Marsascirocco (a bay on the S.E. coast of Malta), at the Marsa, and on the islet of Comino, all in April 1843. Since then I have not heard of any others having been taken.

143. PERDIX COTURNIX. (Quail.)

Summiena, Maltese.

In spring and autumn, especially the latter, large numbers of these birds alight on the island, and constitute the principal game of the sportsmen of Malta. Although usually arriving with the prevalent winds of the season, as before mentioned in reference to birds in general, they also find their way here during perfect calms, provided that it is their season of migration. In spring they come during the night, and chiefly to the west and north-west coasts, Gozo being at this season the most favoured locality. In autumn, on the contrary, they arrive for the most part during the hours of daylight, and then the east and south-east coasts are the parts where they are most abundant; at both seasons, however, they are found scattered throughout both islands. Quails come here in the greatest numbers in September, though in April very large flights occasionally occur. A good shot may bag in a day, in the height of the season, fifty to sixty brace by hard work, notwithstanding the numerous sportsmen out; but such sport is the exception, days repeatedly occurring on which hardly a bird can be found. Ten or fifteen brace are ordinarily a very good bag. Various methods, in addition to shooting, are adopted for catching these birds. A few breed here in March. Some of these are also caught by imitating the call-note of the female, and so drawing the males, which are the first to arrive, into nets spread on the standing corn. A few solitary birds are to be found throughout the winter.

144. Otis tarda. (Bustard.)
Pittarrun, Maltese.

Rare; every two or three years one or two are shot, chiefly in Gozo. It has also been obtained at Marfa (the N.W. extremity of Malta) and in the Valley of Naxiar. Since 1857 I have known of the capture of five individuals. In the autumn of 1862, I was forestalled in the purchase of a fine male in the market by the Governor's purveyor, who had just secured it for Prince Alfred's dinner.

145. Otis tetrax. (Little Bustard.)
Pittarra, Maltese.

Rare; but perhaps rather less so than the preceding species. One, a female, was shot in October 1862.

146. Otis houbara. (Ruffed Bustard.)

Quite accidental. About twenty years ago a male specimen was obtained, during a storm.

147. Cursorius europæus. (Cream-coloured Courser.)

Rare, although few years pass without some being taken. I have seen specimens shot in March, April, and May. It is said to appear also in July, August, and September. The natives very inappropriately call it *Pluviera ta l'Inghilterra* (English Plover).

148. Œdicnemus crepitans. (Thick-knee.)
Tellerita, Maltese.

Common in spring and autumn, until the end of November. Breeds here, in June and July, on the barren rocks in the uncultivated parts of the island, particularly about Marfa. Occasionally seen late in the winter. May be almost considered resident.

149. Charadrius pluvialis. (Golden Plover.)
Pluviera, Maltese.

Taken in considerable numbers, and sold at the poulterers', in November, a few generally arriving in October. Appear again in March, but in much more restricted numbers. A few are seen in December and January. The only one I ever saw in summer plumage was shot in May 1861; it was very small, and in exceedingly bad condition. Bree says that *Charadrius longipes,* a small variety or race found on the Asiatic sea-coasts, has been captured at Malta; and Mr. Tristram writes to me that the specimen referred to was shot by Colonel Drummond-Hay.

150. CHARADRIUS MORINELLUS. (Dotterel.)

Birwina, Maltese.

Also common; arrives early in autumn, and is met with till November. It is most plentiful in October and November. Rarely met with in spring.

151. CHARADRIUS HIATICULA. (Ringed Plover.)

Monakella prima, Maltese.

Common at the heads of the creeks and harbours in spring and autumn. It commences to appear in March, and is occasionally seen in summer.

152. CHARADRIUS MINOR (Mey. & Wolf). (Little Ringed Plover.)

Monakella sekonda, Maltese.

Common, arriving and departing with the preceding species.

153. CHARADRIUS CANTIANUS (Lath.). (Kentish Plover.)

Mr. W. C. P. Medlycott and myself shot several on Fort Manoel Island, in the Marsamuscetto Harbour, in the year 1853; but since then I have not observed it. Owing to its likeness to the cognate species, *C. minor,* it has doubtless been overlooked—as I cannot believe, common as it is on the north and south shores of the Mediterranean, it does not pretty often give us a call in its periodical migrations.

154. HÆMATOPUS OSTRALEGUS. (Oyster-catcher.)

Cavalier, Maltese.

Only an accidental visitor. It has been observed in April, August, September, October, and November. Mr. Medlycott saw one on the 17th April 1854—a day rendered famous by the appearance of almost every species of the families *Ardeidæ* and *Scolopacidæ* that is known to visit Malta, including some of the rarer ones. The wind blew fresh from the eastward, and the passage of birds continued all day. A specimen was killed in the summer of 1860, and another on the 1st April 1861.

155. PRATINCOLA GLAREOLA. (Collared Pratincole.)
Perniciotta, Maltese.

An annual visitor in spring and autumn. It passes in March, April, and May, and again in August and September. In some years it is common, and is generally found in open, freshly ploughed fields, feeding upon beetles and other Coleopterous insects, of which it appears to be very fond. Its flesh is coarse and unfit for food.

156. VANELLUS CRISTATUS. (Lapwing.)
Veneua, Maltese.

Passes in flocks, from November to March. In 1861 some were shot as late as the 14th April; but this is a very rare occurrence.

157. VANELLUS HELVETICUS. (Grey Plover.)
Pluviera pastarda, Maltese.

A pretty regular visitor in April and May, and again in August and September. I have shot specimens in all its mutations of plumage, from the light-grey suit of winter to the black-and-white coat and black waistcoat it puts on for its nuptial attire. The Grey Plover is generally seen here singly along the sea-shore, wading at the brink of the water in the manner of the *Scolopacidæ.*

158. GRUS CINEREA. (Common Crane.)
Grua, Maltese.

A few are seen annually in spring and autumn, and occasionally in the winter months. One was killed on the 13th December 1860, and another in March 1861.

159. ANTHROPOIDES VIRGO. (Numidian Crane.)
Damigella, Maltese.

Accidental; only two or three specimens are recorded. The last was killed in March 1861.

N.B.—The Balearic Crane (*Balearica pavonina*) is mentioned by authors as having been met with at Malta, but I have not been able to confirm this.

160. ARDEA CINEREA. (Common Heron.)
Russet imperial, Maltese.
Not uncommon in spring and autumn. Sometimes seen in winter in stormy weather.

161. ARDEA PURPUREA. (Purple Heron.)
Russet culur-cannella, Maltese.
Large flocks may be seen passing in spring and autumn. Single birds are also often seen and shot. They alight on the carob-trees and along the sea-shore.

162. ARDEA ALBA. (White Heron.)
Schembri records this Heron as a rare visitor.

163. ARDEA GARZETTA. (Egret.)
Agrett, Maltese.
Common in spring and autumn. Large flocks are often seen passing, in company with *A. purpurea.*

164. ARDEA COMATA. (Squacco Heron.)
Agrett isfar (Yellow Heron), Maltese.
I have met with this bird most frequently in May, and shot four or five at different times on Fort Manoel Island in that month. It is also seen in June. It passes again in September.

165. ARDEA BUBULCUS. (Buff-backed Heron.)
There is a preserved skin of this bird in the Malta University Museum; and Schembri records the capture of two specimens in Malta.

166. ARDEA STELLARIS. (Bittern.)
Cappun imperial, Maltese.
It is only now and then that one hears of a Bittern being shot, and it is certainly a rare bird. One was killed at the Marsa in March 1859, another in the spring of 1860, and another in December following. Another was brought to me in October 1863.

167. ARDEA MINUTA. (Little Bittern.)
Blongios, Maltese.
Not uncommon in April, May, and September. It may often

be put up from the *sulla*-fields at the Marsa, and is also met with in the carob-trees.

168. ARDEA NYCTICORAX. (Night Heron.)
Quack, Maltese.

A common annual visitor in spring and autumn. It is generally first seen in March. I have often heard the note of this Heron at night-time passing overhead. It roosts in the carob-trees like the other Herons.

169. CICONIA ALBA. (White Stork.)
Grua or *Cicogna baida*, Maltese.

Rare; not seen annually. One was shot on the 22nd March 1857. I am indebted to Capt. Carr, R.A., for noting two other examples of this bird, which were shot on the 4th and 7th May 1863, and which he kindly sent me for my collection.

170. CICONIA NIGRA. (Black Stork.)
Grua or *Cicogna seuda*, Maltese.

Also rare. I saw three alight in some carob-trees in St. Julian's Valley in April 1852; and I have one which was shot in May 1860, having a malformation of bill.

171. PLATALEA LEUCORODIA. (Spoonbill.)
Paletta, Maltese.

Rare. The following are the only instances of this bird being seen or shot that have come to my knowledge:—One observed on Fort Manoel Island in May 1858; the same or another was shot a few days afterwards at St. Paul's Bay, and another a few weeks later. Three were killed in Gozo in the spring of 1860; and another at Marsascirocco in November of the same year. One of two was killed in May 1861, and two others in June 1862. Another (young), which is in my possession, was obtained at the Salini on the 21st September 1862.

172. IBIS FALCINELLUS. (Glossy Ibis.)
Velleran, Maltese.

A pretty regular visitor in spring and autumn in small flocks. Sometimes a solitary one is seen accompanying a flock of Egrets (*Ardea garzetta*).

173. NUMENIUS ARQUATUS. (Curlew.)
Gurlin, Maltese.

Spring and autumn. Oftenest seen in September and October. It also passes in July, when its well-known call may not unfrequently be heard on still nights.

174. Numenius phæopus. (Whimbrel.)

175. Numenius tenuirostris. (Slender-billed Curlew.)

These two birds are often confounded together, and are indiscriminately called by the Maltese sportsmen *Gurlin sekond* and *Gurlin terz*. They arrive at the same seasons as the Common Curlew. I have shot five or six specimens of *N. tenuirostris* at different times, and examined many others obtained in the market. It is certainly the commonest species of the three. I cannot agree with Dr. Bree's opinion that there can be any question regarding the specific difference between *N. phœopus* and *N. tenuirostris*. As far as my observations extend, the difference between the two species is distinct and constant; and the points in which they differ are clearly laid down by Degland, and entirely correspond with my own experience. The variations observable in the size and length of the bill should not present any difficulty, as the same occur in the common species, *N. arquatus*, and doubtless arise from difference of age and sex. I gain confidence in this opinion on reading a letter from Sir William Jardine to Dr. Leith Adams, which has been kindly placed at my disposal. The remarks contained in this letter are so much to the purpose, that I shall make no apology for giving them here. Referring to some specimens of the Slender-billed Curlew sent to him from Malta by Dr. Adams and myself, Sir William Jardine says:—

"You may rest perfectly satisfied about *N. tenuirostris*. I have not seen Dr. Bree's remarks, but there is no doubt about the distinction. I have compared Whimbrels from a great many localities, and they agree very well together; and I have type-specimens of *T. tenuirostris* from the Prince of Canino, which are identical with the birds I examined, and now have from you. The nearest state of the Whimbrel to *T. tenuirostris* is the male in breeding-plumage. This I have, killed in May; but it is easily distinguished by strength of bill, head-markings, and tail. Of course, in both the kinds you have, the bills differ in length, thickness, and strength, as in the Curlew."

176. Limosa ægocephala (Degland). (Black-tailed Godwit.)
Ghirwiel prim, Maltese.

Not very common. Early in spring and autumn. Passes also in January and February in the winter plumage.

177. Limosa rufa. (Bar-tailed Godwit.)

One example is recorded as having been taken by W. J. Ross, Esq., on the 22nd September 1843. For this information I am indebted to Dr. Leith Adams, who also informs me that this specimen is now in the Derby Museum at Liverpool.

178. Totanus glottis. (Greenshank.)
Ceu-ceua, Maltese.

Arrives in March and September, and is seen occasionally in June, July, and August; also in April and May.

179. Totanus fuscus. (Spotted Redshank.)
Ciuvet, Maltese.

Not so common as the preceding. Spring, summer, and autumn, in all states of plumage. It is oftenest seen from March to May.

180. Totanus stagnatilis. (Marsh Sandpiper.)
Ceu-ceua sekonda, Maltese.

Appears annually in spring and autumn, but is not generally very common. Unlike most of its congeners, it is very tame, and easily approached. I have known it to crouch, as the Stints will sometimes do, and allow a person to walk close past it, without taking flight.

181. Totanus calidris. (Redshank.)
Pluverot, Maltese.

Rather common in March and April, and again in September. Occasionally observed in the summer and winter months.

182. Totanus glareola. (Wood Sandpiper.)
Pespus-tal-bahar, Maltese.

This is one of the commonest and earliest of the Sandpipers in March, and continues to be seen throughout April and part of May. Repasses in July and September. I once saw a flock of upwards of a hundred together. They uttered a loud twittering note, which, coming from so many throats at the same time, produced a curious effect.

183. Totanus ochropus. (Green Sandpiper.)
Sweida, Maltese.

Also rather common, and arrives at the same seasons as the preceding species. It is sometimes to be seen in June. Is more partial to inland situations than *T. glareola.*

184. Totanus hypoleucus. (Common Sandpiper.)
Beggazzina tar-rocca, Maltese.

Very common in spring and autumn. Arrives in March, and is common till May. It then becomes scarce, and, until the middle of July, it is rarely seen. About this time small flocks reappear on the coast, and in August and September it is again common. It almost entirely disappears in winter. A few probably breed here in summer.

185. Machetes pugnax. (Ruff.)
Ghirwiel, Maltese.

Arrives early in spring, and is rather common in March and April. I have seen it rarely as early as February. Repasses towards the end of September, October, and November. Individuals in the full nuptial dress have been taken; but they are very uncommon.

186. Scolopax major. (Great Snipe.)
Bekkach-ta-meju, Maltese.

Not uncommon sometimes in April and May, and occasionally seen earlier; but I have never heard of its being observed in the autumn or winter.

187. Scolopax gallinago. (Common Snipe.)
Bekkach, Maltese.

Pretty common in February, March, and April, and seen till May. It is never, however, very plentiful. Repasses in September, October, and November.

188. Scolopax gallinula. (Jack Snipe.)
Cincogna, Maltese.

Pretty common in March, and reappears in October and November.

189. Scolopax rusticola. (Woodcock.)
Gallina, Maltese.

In some years the Woodcock is not uncommon at the period of its migration in October and November. A few are said sometimes to stay the winter. Individuals are occasionally shot in March.

190. TRINGA CANUTUS. (Knot.)
Ghirwiel rar (rare), Maltese.

There is a specimen in the Malta University Museum. Schembri records the capture of two or three examples in January and February, in winter plumage.

191. TRINGA SUBARQUATA. (Curlew-Sandpiper.)
Beggazzina hamrà (red), Maltese.

Common in spring and autumn. In May it assumes the beautiful red plumage of the breeding-season, in which state I have often shot it in company with Stints (*T. minuta*). I have also seen it in June, July, August, and September.

192. TRINGA CINCLUS. (Dunlin.)
Beggazzina-ta-tis, Maltese.

Common in spring and autumn. Arrives earlier in the spring than the preceding species. On its return in autumn it is seen till November.

193. TRINGA MINUTA. (Stint.)
Tertusca, Maltese.

Very common in spring, part of summer, and autumn.

194. TRINGA TEMMINCKII. (Temminck's Stint.)

I shot one of these diminutive birds on the 21st September 1855, in winter plumage, and another, in summer plumage, in 1858.

195. ARENARIA CALIDRIS. (Sanderling.)

Mr. J. Horne has kindly sent me two Sandpipers which were shot at Marfa (the north-west extremity of Malta) on the 24th September 1862. One of them is *Arenaria calidris*, assuming the winter plumage, and the other *Tringa cinclus*. I have never met with the Sanderling in Malta before, and I believe it is a rare bird in the Mediterranean.

196. STREPSILAS INTERPRES. (Turnstone.)
Monakella imperiala, Maltese.

A rather irregular visitor, and somewhat rare. It generally appears in May, August, and September; but I have shot it in December.

197. HIMANTOPUS MELANOPTERUS. (Stilt.)

Fra-servient, Maltese.

Not uncommon in March and April, and reappears in September and October.

198. RECURVIROSTRA AVOCETTA. (Avocet.)

Scifa, Maltese.

Very rare. When seen, it has generally been in April and May. There are two specimens in the University Museum, which were shot many years ago. I have a specimen, a female, shot at the Salini, out of a party of three, on the 7th November 1860. One of the two others, a fine male, was afterwards killed at the same place, and another in the spring of 1862.

199. PHŒNICOPTERUS ROSEUS. (Flamingo.)

Fiamingu, Maltese.

Merely an accidental visitor. When seen, it has generally been in June. One was shot in 1860, in May.

The Flamingo is very common on the lagoons and inland lakes of Barbary, particularly on the lagoon of Tunis, where I shot two in March 1859. I know of no more striking sight than the flight of a large number of these extraordinary-looking birds, of which it is no unusual thing to see as many as five or six hundred or even a thousand together. Their long legs and necks stretched out to their fullest extent, with an African sun shining on their white bodies and crimson wings, form a spectacle which, once witnessed, must ever remain deeply impressed on the mind. They are exceedingly shy, and it was only by pursuing them for several days in a sailing-boat, and using a heavy charge of powder and pistol-bullets, that I finally succeeded in obtaining the specimens alluded to.

200. RALLUS AQUATICUS. (Water Rail.)

Gallotz-ta-scitua (Winter Rail), Maltese.

Not very common. Spring and autumn, and a few in the winter months.

201. RALLUS CREX. (Corn Crake.)

Gallotz-ta-Germania, Maltese.

Not uncommon. It is an early visitor in spring, and appears again in autumn. Never heard it call.

202. Rallus porzana. (Spotted Crake.)
Gallotz sekond, Maltese.

Pretty common. Appears at the same time as the preceding species. Most plentiful in March.

203. Rallus bailloni. (Baillon's Crake.)

This bird is probably commoner than it is generally considered to be, owing to its retiring habits and its being mistaken for *Rallus pusillus.* The first that came under my notice was shot by Mr. J. Quintana, at the Marsa, on the 27th October 1860, and another was killed at the same place on the following day. Two others are in my possession, both obtained in March—one in 1861, and the other in 1862. I have seen three others in local collections. The most recent capture (March 19, 1863) came into the possession of Capt. Morgan, who skinned it.

204. Rallus pusillus. (Little Crake.)
Gallotz terz, Maltese.

Rather plentiful in spring in some years, but less so in autumn. Oftenest met with in March, in low humid localities at the head of the Great Harbour.

205. Gallinula chloropus. (Water Hen.)
Gallotz prim, Maltese.

Not uncommon in March, April, and early in May, and again in September.

206. Fulica atra. (Coot.)
Tigiega-tal-Bahar, Maltese.

Common in spring and autumn, more particularly in the latter season, when it begins to appear about the middle of August, and is seen till November.

207. Fulica cristata. (Crested Coot.)

I killed a specimen of this African species, in fine breeding-plumage, in May 1859. Dr. Gulia informs me that three others were shot at Marsa Scala, in February 1860.

208. Stercorarius catarractes. (Skua.)

On the 9th June 1860 a specimen of this northern bird fell into my hands, which had been shot at the Salini, on the north coast of Malta, some time before.

209. STERCORARIUS POMARINUS. (Pomarine Skua.)
Schembri notices the capture of a single individual at sea, twenty miles to the northward of this island.

210. LARUS FUSCUS. (Lesser Black-backed Gull.)
Rather rare. Mr. W. C. P. Medlycott shot one in the winter of 1858. I have seen several at different times in the winter of 1859–60, and in May 1861 and 1862. In May 1863, two fine examples appeared daily, for upwards of a week, in the Marsamuscetto Harbour, in company with several Herring-Gulls; and one of them was shot by Lieut. Sperling, R.N., of H.M.S. 'Icarus.'

211. LARUS ARGENTATUS. (Herring-Gull.)
One of the commonest Gulls here in winter and spring, when it may be seen daily in the harbours and round the coast. It becomes very scarce in summer and autumn; but a few breed annually in the precipitous cliffs on the southern coast of both Malta and Gozo. I have an egg of this bird, taken here, and have seen several others. The Maltese call all the Gulls by the general name of *Gauja*.

212. LARUS AUDOUINI. (Audouin's Gull.)
I have a note from Mr. Tristram saying that he had observed this species at Malta.

213. LARUS CANUS. (Common Gull.)
Schembri says it is common in autumn and winter. There is a specimen in the Malta Museum.

214. LARUS TRIDACTYLUS. (Kittiwake Gull.)
Schembri records the capture of one in January 1843. It is said to be common at Gibraltar.

215. LARUS GELASTES. (Slender-billed Gull.)
There are two Malta-killed specimens in the University Museum. I believe that I have seen it several times flying about the harbours, but never succeeded in shooting one.

216. LARUS MELANOCEPHALUS. (Adriatic or Mediterranean Gull.)

This is the Common Gull of Malta, and visits us very regularly at the time of its migrations. It arrives in large flocks about the first week of December, and sometimes a little earlier. By the end of March, when it has assumed the pure black head of the breeding-plumage, it suddenly departs in search of suitable places for nidification. Not a single bird lingers behind; and all my endeavours to find it breeding here have proved in vain. It is very sociable in its habits, and during winter congregates in large flocks in the harbours, feeding on the offal from the ships and town. It is amusing to see what excellent timekeepers they are in reference to the hours of meals on board the men-of-war. On their return in December the black head is no longer visible, having become white at the autumnal moult. They are then accompanied by the young of the year, which, like other Gulls, differ considerably in their plumage from the adult birds. Mr. Medlycott and Mr. Tristram saw this species breeding in the cliffs of the Island of Sardinia, in May.

217. Larus ridibundus. (Black- or Brown-headed Gull.)

Associates with the former species, but is by no means so common. It does not appear to remain long enough to assume the brown head; at least, I have never met with it in the breeding-dress. Schembri mentions having obtained a specimen of the variety *Larus capistratus*, Temm., or Masked Gull, which he includes as a species.

218. Larus minutus. (Little Gull.)

In some years this species is pretty plentiful in our harbours in winter, and it not unfrequently arrives in September. Its great tameness and fearlessness of danger are a remarkable feature in this bird. I have shot as many as nine or ten in the course of a few hours, and might have shot more. It may easily be recognized on the wing by its small size, peculiar light butterfly manner of flight, and dark under-wing-coverts. I have never seen it here in the breeding-plumage. Besides the general name of *Gauja*, or Gull, the Maltese call it *Cirleua*, or Tern, from its somewhat similar mode of flight.

219. Sterna cantiaca. (Sandwich Tern.)

A few are sometimes seen in autumn and winter.

220. Sterna hirundo. (Common Tern.)
A few in spring, autumn, and winter.

221. Sterna minuta. (Lesser Tern.)
Rare. Mr. Medlycott shot a specimen a few years ago. I saw two others in St. Paul's Bay, in August 1855. In Marsala, Sicily, I observed a good many of these pretty little Terns, and shot several in the month of August.

222. Sterna fissipes. (Black Tern.)
Occasionally observed in autumn and later. I shot one out of three on the 23rd July 1858, at Fort Manoel.

223. Sterna leucoptera. (White-winged Black Tern.)
Visits us in spring and autumn. Several in my possession were shot in May.

224. Sterna hybrida. (Whiskered Tern.)
Visits us in spring, summer, and autumn. Not common. I have a specimen that was shot, with two or three of the preceding species, on the 16th May 1860. This and the preceding species generally appear at the head of the Great Harbour in May, after or during a strong north-westerly wind.

225. Puffinus cinereus. (Cinereous Shearwater.)
Ciefa, Maltese.

226. Puffinus anglorum. (Manx Shearwater.)
Garni, Maltese.
Both these species are sedentary, and breed on the southern coast of Malta and Gozo and on the islet of Filfla, as also on the small island of Comino. I have frequently visited Filfla in June and July, and taken the eggs, as well as the young and old birds. They lay a single egg of a pure white, rather large, and deposit it on the bare ground, in a crevice or under a fragment of rock. That of *Puffinus anglorum* is rather smaller and more elliptical than the other. Like many other sea-birds, they allow themselves to be taken whilst sitting, without making any attempt to escape, merely snapping at the intruder's fingers with their strong sharp bill. Both young and old birds, when handled, are apt to eject, in a very disagreeable manner, a greenish fluid, formed by their feeding on the *Inula crithmoides,* one

of the few plants that grow on that desolate rock. The fishermen use the flesh of these birds to bait their wicker pots.

227. THALASSIDROMA PELAGICA. (Storm Petrel.)
Cangiu-ta-Filfla, Maltese.

Sedentary, and very common on the south side of the island. Also breeds at Filfla. It lays a single white egg, without making any nest. This bird was described by Schembri as a new species, under the name of *T. melitensis*, on account of certain variations in the white markings of the tail-feathers. These variations, however, are observable in specimens from other parts of Europe.

228. PHALACROCORAX CARBO. (Cormorant.)
Margun, Maltese.

Not uncommon, but is not very regular in its visits. Generally appears in the winter months. I have seen it, however, in spring, summer, and autumn.

229. PELECANUS ONOCROTALUS. (Pelican.)
Sassla (Scoop), Maltese.

Accidental. In 1848 a great many were driven on this island during a violent gale of wind from the north-east, and many were shot at Sliema, St. Julian's, and other places on the north coast. In July 1859, after a gale from the north-west, a male in full breeding-plumage was shot at Marsascirocco. At the end of October and beginning of November 1861 several were seen, and two or three shot (young birds).

230. ANSER SYLVESTRIS. (Bean Goose.)
Wizza salvaggia, Maltese.

In stormy weather about the time of the autumnal equinox, and in winter, flocks of Wild Geese are sometimes seen passing over the island or along the coast. They seldom make any stay, and are not very often shot. All those I have examined were of this species.

N.B.—The two specimens of *Anser brachyrhynchus* noticed in my list, published in Dr. Gulia's 'Ripertorio di Storia Naturale di Malta,' as having been obtained in the Malta market in May 1858 by Mr. Tristram, proved, on closer examination by that gentleman, to be examples of *Anser sylvestris*; so that *A. brachyrhynchus* must come out of the Malta list.

231. CYGNUS FERUS. (Hooper.)

Zinna, Maltese.

From time to time, at rare intervals, small flocks of Swans have been seen flying along the coast in stormy weather. The only one examined by me was a specimen of *C. ferus,* which was shot on the 27th January 1847, and is now in the Malta University.

232. ANAS TADORNA. (Shieldrake.)

Culuvert-ta-Barberia, Maltese.

At the end of October or beginning of November these birds first arrive, and a few pass throughout the winter.

233. ANAS CASARCA. (Ruddy Shieldrake.)

One specimen shot, by Signor F. Borg, on the north coast, and its skin preserved.

234. ANAS CLYPEATA. (Shoveller.)

Palettuna, Maltese.

One of the commonest of the Maltese Ducks. Passes from November till the beginning of spring.

235. ANAS BOSCHAS. (Mallard.)

Culuvert, male; *Borca,* female, Maltese.

Not uncommon along the sea-shore in November and December. A few appear again in March.

236. ANAS ACUTA. (Pintail Duck.)

Silfiun, Maltese.

Occasionally in the winter.

237. ANAS STREPERA. (Gadwall.)

Culuvert sekond, Maltese.

Occasionally in the winter.

238. ANAS PENELOPE. (Wigeon.)

Silfiun, Maltese.

Not uncommon in winter, and sometimes seen in spring and summer. I have a specimen which was shot on the 8th June.

239. ANAS QUERQUEDULA. (Summer Teal.)

Sarsella, Maltese.

Not uncommon in spring and autumn, and occasionally in summer.

240. Anas crecca. (Teal.)

Sarsella, Maltese.

Not uncommon in spring, and from November to March. They also sometimes appear during the strong north-westerly winds which prevail in June.

241. Fuligula ferina. (Pochard.)

The first Maltese specimens I saw of this species were a male and female, which I shot on Fort Manoel Island, in November 1858. Mr. W. C. P. Medlycott afterwards shot one in Sliema Creek, in December 1859. Since then I have almost yearly observed a few individuals in the market.

242. Fuligula cristata. (Tufted Duck.)

Braimla, Maltese.

Very rare; seen in winter.

243. Fuligula nyroca. (Nyroca Duck.)

Braimla, Maltese.

Perhaps the commonest Duck which visits the island. Arrives in the autumn, winter, and spring.

244. Fuligula rufina. (Red-crested Whistling Duck.)

A specimen was obtained on the 1st September 1861. I was only in time to secure the bill and legs, which were enough to determine the species; the rest had been consigned to the pot. Mr. Tristram, I believe, has also observed it in Malta.

245. Mergus serrator. (Red-breasted Merganser.)

Serra, Maltese.

A well-known bird here; but it is much rarer in some years than in others. It arrives in November; but I have seen it oftenest in December and January, when both immature and, very rarely, adult birds are met with.

246. Mergus albellus. (Smew.)

Serra, Maltese.

Very rare. Never saw it myself, but give it on the authority of Schembri.

247. Colymbus septentrionalis. (Red-throated Diver.)

Blongiun, Maltese.

Schembri states that he saw one in 1839, and another in

1841; and I am informed by Dr. Gulia that M. Barthélemy, of Marseilles, shot four specimens (young birds) in Gozo in the winter of 1858–59.

248. Podiceps cristatus. (Crested Grebe.)
Blongiun prim, Maltese.

Common. Arrives in September, and may be seen during the greater part of the winter. It is sometimes seen on passage in the spring.

249. Podiceps cornutus. (Horned Grebe.)
Blongiun sekond, Maltese.

Met with in winter.

250. Podiceps auritus. (Eared Grebe.)
Blongiun sekond, Maltese.

Not very common; but I have obtained four or five specimens.

251. Podiceps minor. (Little Grebe.)
Blongiun terz, Maltese.

Not uncommon about the end of August or beginning of September.

252. Uria troile. (Guillemot.)

One specimen was taken about twelve years ago, and is still in the possession of Dr. Grech Delicata, Professor of Zoology and Botany in the Malta University.

253. Fratercula arctica. (Puffin.)

Schembri mentions the capture of a single specimen of this rare Mediterranean bird in November 1832.

XII.—*Five Months in the West Indies.*

By E. Cavendish Taylor, M.A., F.Z.S.

Part II.—*Martinique, Dominica, and Porto Rico.*

[Continued from p. 97.]

From Trinidad or Venezuela to the Windward Islands is a great descent in an ornithological point of view; for whereas the former localities are excessively rich in birds, both as regards species and individuals, the latter are decidedly poor in species, and, except in the case of Humming-birds (*Trochilidæ*), in individuals also. I may here mention that by the term *Windward Islands* I mean the whole chain of islands, formerly called the Lesser Antilles, lying between Trinidad and the group of small islands called the Virgin Islands. Bird-collecting in these islands is rather uphill work, as birds are rather scarce, and it is impossible (at least I found it so) to obtain any assistance either in shooting or skinning them. Porto Rico is better supplied with birds than the Windward Islands, but is, of course, not to be compared with Trinidad.

Before giving a list of the birds I succeeding in procuring in these localities, I will briefly describe the route of the Royal Mail Steam-packets from Trinidad, through the Windward Islands, to St. Thomas and Porto Rico, making a few remarks on each island *en passant*. Tobago I did not see, so I content myself with saying that its capital is Scarborough, on the windward coast of the island; but the steamer calls at Courland Bay, on the opposite or leeward coast. After leaving Port of Spain, Trinidad, and steaming through one of the lovely channels of the Boca del Drago, a run of about nine hours brings us to Granada, which has the great advantage, shared by but few of the British West Indian Islands, of possessing a good though not large harbour, on which stands the town of St. George, the capital of the island, where the steamer calls. Formerly, when the niggers were slaves and obliged to work, Granada was one of the most important and productive of these islands; but now, with the exception of St. Lucia and Dominica, it is the most poverty-stricken. Most of the estates are abandoned, and a great part of the island has gone back to bush. Granada differs from the other islands of the group in not possessing one of those lofty, conical, semi-extinct volcanos which, in these parts, are called *souffrières*. It is a lovely green island, extremely rugged and mountainous, but nowhere attaining a very high elevation. It is considered very healthy, and has a *spécialité* for fruit and turtles. As the steamer stops here to coal on its way up to Trinidad, I was able to spend the whole day on shore—an opportunity of which I gladly availed myself. This was my first day ashore in the West Indies.

I remember seeing a good many birds, and being much delighted with my first introduction to live Humming-birds, which took place here. The impression derived from that day's experience was, that Granada is richer in birds than Martinique or Dominica; but as I had not my gun on shore, and as I was then quite ignorant of West Indian forms, I really cannot give the name of any one species I saw. After leaving Granada we pass, without stopping, the group of little islands called the Grenadines, the chief of which is Cariacou. Both going and returning I passed these islands in the night, and therefore saw nothing of them. We then arrive at St. Vincent, the capital of which is Kingstown, where the steamer calls. This is also a beautiful green-looking island, not so rugged in its general features as Granada, but with a lofty *souffrière* towards the north coast, which attains a height of 4000 feet, and is said to be one of the best worth seeing in the West Indies. It was once very prosperous and highly cultivated, but is now very much the reverse; still I do not think it has fallen quite so low as Granada. I had intended staying a fortnight in St. Vincent; but yellow fever having broken out there just as I was passing, I abandoned that intention. From St. Vincent a beat of 100 miles dead to windward brings us to Barbadoes, where the passengers by the Trinidad boat have generally to tranship into the boat from Demerara. Barbadoes, or "Bimshire" as it is playfully called, presents a very striking contrast to the other Windward Islands. The latter are beautiful, green, mountainous, covered with forest, little cultivated, and very thinly inhabited; the former is ugly, brown, utterly devoid both of mountains and woods, is every inch under sugar, and swarms with a very dense population. Barbadoes is, I believe, just the size of the Isle of Wight; it is rather larger than Granada, St. Vincent, or Antigua, is about half the size of Sta Lucia and Dominica, and about twice that of St. Kitt's. It is quite harbourless,—the anchorage off Bridgetown, where the packets lie, being a mere open roadstead. Bridgetown, the capital, is a large, straggling, ill-built town, its only points of merit being its ice-house, which is the best in the West Indies, and its street-cabs, which other West Indian towns do not possess. Barbadoes lies quite out of the chain of the Windward

Islands, its position being about 100 miles to the east or windward of them. In its geological formation it is also distinct from them; they are all (except Antigua) volcanic, while it is a coral-island. The sea in the neighbourhood of Barbadoes swarms with flying-fish, which are eaten and much esteemed: I found them good, but rather dry. All the flying-fish I saw while in the West Indies seemed to be of the same species; from the length, and backward position of the ventral fins, I suspect that they were *Exocœtus exiliens.* From Barbadoes a course of about 100 miles brings us to Sta Lucia, where we lie off at the entrance of the fine harbour of Castries, the capital of the island. Sta Lucia decidedly enjoys a worse reputation than any other of these islands; it is undoubtedly about the most desolate and poverty-stricken of the lot, and it is said to be the most unhealthy. And then Sta Lucia swarms with venomous snakes to such a degree that I was told one could not go even a step or two into the bush without being bitten; and, if bitten, one was sure to die. Any one living in a neighbouring island looks upon a friend about to visit Sta Lucia as a "gone 'coon," and begs him to make his will before starting. It is certainly a remarkable fact that the adjacent islands, Sta Lucia and Martinique, swarm with a peculiarly venomous species of snake, while all the other Windward Islands, the Virgin Islands, and Porto Rico are quite free from any venomous snake whatever. The scientific name of this much-dreaded reptile is *Trigonocephalus lanceolatus*; the English call it the Rat-tailed Snake; the French call it *Serpent fer de lance.* It attains a large size, and is, I believe, peculiar to these two islands. In Sta Lucia these serpents come even into the town at night, so that it is not safe to walk in the dark without a lantern; in the much more cultivated and inhabited island, Martinique, they are less numerous. *En revanche,* Sta Lucia is exceedingly lovely as seen from the sea—so beautifully green and wooded. Its *souffrière* is said to be very curious and well worth a visit, and it abounds in conical sugar-loaf-shaped hills, locally called *pitons.* I do not think that any of its mountains are very high; but their outline is peculiarly picturesque. The next island, going north, is the fine and important French island, Martinique, in which I stayed a fortnight. This is, next to Guadaloupe, the largest of the Windward Islands, being about a third larger than Sta Lucia or Dominica. It is far more prosperous, better cultivated, and more inhabited than any of the English islands, except Barbadoes. Sugar is its chief if not its only produce, but of this it manages to produce a great quantity. The steamer calls at St. Pierre, the commercial capital, which is the largest town, I believe, in the West Indies, except Havana. The seat of government, however, is at Fort de France, formerly Fort Royal, which has the advantage over St. Pierre of possessing a good harbour. Fort de France is the first port of call of the new French line of West Indian steamers which run from St. Nazaire here, and hence on to St. Jago de Cuba and Mexico. It is a much smaller town than St. Pierre, but far cooler and pleasanter. Martinique most certainly does not abound in birds: I could make a larger collection in Trinidad in a week than here in a couple of months. I was told that four species of Humming-bird were found in Martinique; but I only saw three, viz. *Orthorhynchus exilis*, *Eulampis jugularis*, and *E. holosericeus*, of which the first is the most abundant, and the last the least common. I made several excursions into various parts of the island; the most interesting was to a mineral-bath establishment, about two hours' ride from Fort de France, situated on the slope of a group of beautiful volcanic mountains called Les Pitons de Carbet, where I stayed for a day or two. This was the best locality for birds that I discovered in Martinique. The highest mountain in the island is the extinct volcano called La Montagne Pelée, situated a few miles N.E. of St. Pierre, which attains an elevation of about 4500 feet.

Next to Martinique comes Dominica, the most beautiful, the wildest, and the least cultivated and inhabited of any of these islands, where I stayed a fortnight, the happy guest of his Excellency Thomas Price, Esq., the Governor. The island of Dominica is about thirty miles long by fifteen miles wide, and is simply a mass of mountains rising abruptly, and in many parts perpendicularly, out of the sea, and clothed from base to summit with the greenest and most luxuriant vegetation. As palms and silk-cotton trees are the *spécialité* of Trinidad, so are tree-ferns of

Dominica. In many parts, especially where the forest and bush have been burnt, the hills are covered with tree-ferns, which average, I should say, from twenty to thirty feet in height. The capital is Roseau, on the leeward coast, where the steamer calls. There is not a single mile of carriage-road in the whole island; and although the town of Roseau is situated at the mouth of a river of the same name, there is absolutely no bridge; so that, unless you are on horseback, you must strip and wade, if you want to get across it. The reproach levelled at the town by Mr. A. Trollope of having no pier or landing-place exists no longer, thanks to the energy of the present Governor, who has had a very good and convenient stone pier constructed, and is proceeding to build a bridge also. The mountains of Dominica are the highest of any in the whole chain of the Lesser Antilles: the highest peak of Morne Diablotin, in the centre of the island, reaches a height of 5300 feet; and Conliabon, near Roseau, exceeds 4500 feet. There is a large lake, of vast depth, up in the mountains, at an elevation of over 3000 feet; also a *souffrière* near the south end of the island; and a lot of hot springs, which boil up, in the Roseau valley,—all of which I visited. I found the same three species of Humming-birds in Dominica as in Martinique; in Dominica, however, *Eulampis holosericeus* and *Orthorhynchus exilis* were the most common, and were excessively abundant, *Eulampis jugularis* being much less so. The island also abounds in a very large species of Frog (*Cystignathus ocellatus*), much larger than the North-American Bull-Frog; these are called by the Creoles *Crapauds*, and are eaten and highly esteemed. I can vouch, from experience, that they are excellent; the flesh is white, and tastes like that of a young rabbit. The Antillean Boa (*Boa diviniloqua*) is also very common here; its Creole name is *Serpent tête-chien*: I caught several of them, and brought one alive to England.

After leaving Dominica and crossing the channel, of about twenty-five miles, which separates the islands, we come to the French island, Guadaloupe, which is considerably the largest and in many respects the most remarkable of the Lesser Antilles. Guadaloupe is a double island: the leeward or western portion, which is called Basseterre, is mountainous and volcanic, and rather larger than Dominica; the windward or eastern portion, which is called Grandeterre, is level, formed of coral, and is larger than Barbadoes. These two islands are separated by a very narrow channel, called La Rivière Salée. The steamer calls at Basseterre, on the leeward coast. This is a small town, but is the seat of government of Guadaloupe: it is situated on open ground, which gradually slopes up from the sea to the foot of the *souffrière*, a fine, picturesque, semi-extinct volcano, 5000 feet high. The commercial capital is called Pointe à Pitre; it is in Grandeterre, just at the south entrance of the Rivière Salée, and is a fine, well-built town. Guadaloupe produces a great quantity of sugar, the larger part of which is, I believe, grown in Grandeterre. Basseterre produces coffee as well as sugar. I am inclined to believe that, on the whole, there is more to be seen in Guadaloupe than in any other of the Windward Islands. The next island to the north is Antigua, which differs from most of the rest of this group in not being volcanic, nor mountainous, nor very beautiful. I do not mean to say that it is flat and ugly, like Barbadoes; but it has no mountains and no forests, which are two important elements of beauty in tropical scenery. The capital is St. John's, on the north coast, which has no good harbour. The steamer calls at English Harbour, on the south: this is a deep, land-locked, but very narrow harbour, in which is a dockyard and government establishment. Close to English Harbour is the larger but less deep harbour of Falmouth, which was lately surveyed by order of Government, to see if it would do, instead of St. Thomas, as the port of transhipment for the Windward Islands, Trinidad, and Demarara; it was, however, declared to be too shallow, and English Harbour too narrow, for the purpose. This is much to be regretted, as in point of location Antigua is perfect, being the shortest route to every important point—which St. Thomas is not. Though much fallen from its former prosperity and importance, Antigua is yet much more cultivated and inhabited, and produces more sugar, than any other of the English islands I have mentioned in this article, except Barbadoes.

On leaving Antigua, our course, which has hitherto been nearly due north, takes a westerly direction, and we steer for St. Kitt's, and lie-to off Basseterre, the capital of this small but pretty and prosperous island. St. Kitt's has a high mountainous ridge in the centre of the island, called Mount Misery, which attains a height of 4000 feet. Near the coast the land is level and well cultivated, and produces a good deal of sugar. Close to St. Kitt's, to the S.E., is the still smaller island, Nevis, which seems to be a single, high mountain, with very gradually sloping sides, covered with sugar-cane. Both these islands are now, I believe, doing very well. I was informed by several people well acquainted with St. Kitt's that the island abounds with monkeys, which live in the mountains, and descend at night to the sugar-cane pieces and do a great deal of damage. I was further assured that these monkeys, which are about the size of a cat, and very fierce and untameable, are also found in Nevis. Now it certainly seems a very wonderful thing that monkeys should abound, or even exist, in these two small islands, when all the other West Indian Islands, both Greater and Lesser Antilles, including the large islands of Cuba, St. Domingo, Jamaica, and Porto Rico, are utterly monkeyless. In Trinidad, of course, there are lots of monkeys, of two sorts, viz. a *Mycetes* and a *Cebus*, of the same species as those found on the adjacent parts of South America.

After leaving St. Kitt's we touch nowhere till we arrive at St. Thomas, which much-abused little Danish island may be said to consist simply of a harbour, with a town at the head of it, backed by a high, steep ridge of hills. Both harbour and town are very good of their kind, the harbour being large, deep, commodious, and well sheltered; the town, which is called Charlotte Amelia, being one of the best, though not one of the largest, in the West Indies. One morning I walked to the top of the high, steep ridge at the back of the town, and was rewarded by a beautiful view, which embraced the greater part of the group of Virgin Islands. I had also the pleasure of seeing again my old friend, *Crotophaga ani*, whom I had lost sight of since I left Trinidad; also another Cuckoo, probably *Coccyzus seniculus*, and lots of Ground-Doves.

After spending three days at St. Thomas, on the evening of the 1st of May I went on board the Jamaica packet, and the next morning, at sunrise, found myself off the north coast of Porto Rico, in sight of St. Juan, the capital, where the steamer calls on its way to Jamaica. I remained a fortnight in Porto Rico, enjoying the kind hospitality of Mr. George Latimer, one of the principal inhabitants of the island. Porto Rico is the fourth in point of size of the West Indian Islands, being very little inferior to Jamaica in that respect, but far superior to it in population, prosperity, wealth, and quantity and value of produce; indeed, it is second to Cuba alone of West Indian colonies in its annual exports of sugar. This satisfactory result may be ascribed in a great measure to the institution of slavery, which still obtains here. The greater portion of Porto Rico is pretty level, and well adapted for the cultivation of the sugar-cane; the centre of the island, however, is mountainous, the highest part being the range called the Sierra de Luguillo, towards the east end; even here, however, the elevation does not exceed 4000 feet. The scenery is in many parts exceedingly beautiful; it must be confessed, however, that in the size of its trees, the extent of its forests, and the general luxuriance of its vegetation, Porto Rico does not come up to Trinidad, nor, on the other hand, does it equal in grandeur the magnificent mountain-scenery of Dominica. St. Juan, the capital, is decidedly the best and most city-like town I saw in the West Indies. St. Juan is brilliantly lighted with gas, while St. Pierre, Martinique, and St. Thomas are dimly lighted with oil; and Port of Spain, Trinidad, is not lighted at all. In general appearance, in the fashion of its houses and fortifications, but above all in situation, St. Juan is singularly like Cadiz, only not so large nor so dilapidated. During my stay in Porto Rico, I spent three or four days at a sugar-estate belonging to Mr. Latimer, situated on the River Loisa, at a distance of about twenty-two miles to the east of St. Juan, where I had the opportunity of observing the working of an estate by slave-labour. This estate (which is called Punta) and its vicinity I found a very good locality for birds. I also made several shorter excursions in all directions from the capital. Porto Rico is much richer in birds generally than either Martinique or Dominica, and it especially abounds in Pigeons (*Columbidæ*). Humming-birds (*Trochilidæ*), on the contrary, I found very scarce: *Lampornis viridis* is the only species I procured here, and that was by no means abundant. This island is singularly deficient in Mammalia; it can boast of no wild native mammal larger than a rat: even the Agouti (*Dasyprocta*), which is found in all the Windward Islands and even in St. Thomas, does not occur here.

The names in the following list of the birds which I met with during my tour through these Islands are mostly taken, as in my former paper, from Dr. Sclater's 'Catalogue of American Birds.'

1. TINNUNCULUS SPARVERIUS. American Kestrel.

Occurs, I believe, in all the Windward Islands. I saw it frequently, in Dominica.

2. MIMOCICHLA PLUMBEA (Vieill.).

Tolerably common in Porto Rico, where I obtained a specimen. I have a strong suspicion that I saw it also in Martinique. Bill, eyelids, legs, and feet bright yellow.

3. RAMPHOCINCLUS BRACHYURUS (Vieill.).

Obtained in Martinique, where it was pretty common in the thick forest. It seems a noisy, restless bird. Creole name, *Gorge blanche*. Seen nowhere but in Martinique.

4. DENDRŒCA PETECHIA (Linn.); Sclater, Cat. A. B. p. 32.

Abundant in Porto Rico, and still more so in Dominica; but I do not remember seeing it in Martinique. Specimens from Porto Rico are larger than those from Dominica.

5. PROGNE DOMINICENSIS (Gm.).

Obtained in Porto Rico, where it was very abundant.

6. VIREOSYLVIA ALTILOQUA (Vieill.).

Common both in Porto Rico and Dominica; but not observed in Martinique. Note loud and clear.

7. CERTHIOLA FLAVEOLA (Linn.).

It is a remarkable fact that each of the three islands I visited has its own peculiar species of *Certhiola*, and that the specimens from each island are so very distinct in size and colour that any doubt as to their specific value can hardly exist. The specimens from Porto Rico, to which Dr. Sclater assigns the name *Certhiola flaveola*, are much the smallest, and agree exactly with the description of the *Certhiola* from Jamaica given by Messrs. A. and E. Newton (Ibis, 1859, p. 68).

8. CERTHIOLA DOMINICANA, sp. nov.

This species (which is very abundant in Dominica) differs from the last in being considerably larger, in having the yellow patch on the rump much less clearly defined, the throat much darker in colour, the yellow of the under parts much brighter and deeper in tint, and in the white on the outer edge of the primaries being altogether absent. These birds were breeding in Dominica in April.

9. CERTHIOLA ALBIGULA, Bp. Notes Orn. p. 51.

This, the Martinique species, is not quite equal in size to that from Dominica, and the yellow of the under parts is paler and duller in tint. The patch on the rump is so faintly marked as to be hardly perceptible; and it has no white on the outer edge of the primaries. But the most striking specific character is a broad stripe of white down the centre of the throat. The Creole name of this bird, both in Martinique and Dominica, is *Sucrier*.

10. SALTATOR GUADALUPENSIS, Lafr.

Obtained in Dominica, where it is pretty common. Not seen in either of the other islands.

11. LOXIGILLA NOCTIS (Gm.).

Abundant both in Martinique and Dominica, but not seen in Porto Rico.

12. PHONIPARA OMISSA, Jard.

This plain-coloured little bird is very common in Martinique, Dominica, and Porto Rico. In the two latter islands I found its nest, which is domed like a Willow Wren's, but smaller. The eggs, three in number, are white, with spots of rusty-red colour. I never found the nest of any West Indian bird, except *Crotophaga ani*, containing more than three eggs.

13. ICTERUS BANANA (Linn.).

Common in Martinique, where it is called *Le Carouge*; but not seen either in Dominica or Porto Rico. It is said to suspend its purse-like nest from the fronds of the banana or plantain.

14. ICTERUS DOMINICENSIS (Linn.).

Common in Porto Rico, where it especially affects the Cabbage-

Palm trees (*Areca oleracea*), in which, I suspect, it builds. Legs dark blue.

15. Icterus xanthomus, Sclater, Cat. A. B. p. 131.*

Excessively abundant in Porto Rico, and very tame and familiar. I did not see either this or the preceding species in the Windward Islands. Legs black.

16. Quiscalus barita (Gm.); Bp. Consp. p. 425.

This species is pretty common in Martinique, but still not very abundant. The Creoles there call it *Le Merle*, and do not seem at all aware that it in any respect differs from the true Blackbird of Europe. In Dominica I did not happen to see it; but it probably does occur there. In Porto Rico it is extremely abundant, and is in fact the commonest bird in the island. It is very tame, and especially frequents the farm-buildings on the estates. It had only just begun to breed when I was in Porto Rico, in the beginning of May; however, I found a nest in an Avocado Pear tree (*Persica gratissima*): it was placed in a fork near the top of the tree, and was in size, form, and general appearance very like that of a Blackbird (*Turdus merula*). It contained one egg, which is decidedly small for the size of the bird, and in colour resembles those of the rest of the *Quiscalinæ*.

17. Corvus leucognaphalus (Vieill.).

One morning, in Porto Rico, as I was looking after birds in a large wood, I heard at some distance off a most extraordinary sound—a kind of piping or jabbering noise such as I had never heard before; so I went to see what it could be. I found it proceeded from two large Blackbirds jabbering to one another in the top of a high tree. I did not succeed in procuring one on that occasion; but subsequently I was more fortunate. In size this species fully equals and, I think, even exceeds the common Crow (*Corvus corone*). Although when the feathers lie smooth the bird seems entirely black, on raising them it is seen that the base of each feather is white. Irides bright red.

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* In my Catalogue (in a footnote) I described this bird as new, not being able to associate it with any known species. The locality there given (Mexico) was taken from M. Verreaux's label to the specimen described. It now appears that this was an error, and that the true home of the species is Porto Rico.—P. L. S.

18. **Tyrannus griseus**, Vieill.

This is a very abundant species in Porto Rico; but I did not meet with it anywhere else. It is very bold and familiar, and has a loud, shrill note. Next to *Quiscalus barita*, I think this is the most common bird in Porto Rico.

19. **Pitangus taylori**, Sclater, sp. nov.*

This species, which Dr. Sclater has done me the honour of naming after me, is by no means rare in Porto Rico; it is not, however, nearly so abundant as the preceding one.

20. **Myiarchus**, sp.?

I shot a pair of birds of an obscure species of this genus in Dominica one morning; but, as this was the only occasion that I saw it, I suspect it is not very common.

21. **Elainea martinica**, Linn.

I found this little bird rather common in Dominica, but did not meet with it elsewhere.

22. **Lampornis viridis**, Gould, Mon. Troch. ii. pl. 78.

Porto Rico is the only locality where I met with this rare Humming-bird, and it was by no means abundant there.

23. **Eulampis jugularis**, Gould, Mon. Troch. ii. pl. 82.

I obtained this fine species both in Martinique and Dominica; it is abundant in the former, but less so in the latter island. It frequents cool valleys and thick shady places, and shows a strong preference for bananas and plantains, on the flowers of which it seems to feed. It is decidedly the largest species of Humming-bird I have ever seen alive.

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* **Pitangus taylori**, sp. nov.

P. supra fuscus, capite nigricante, crista interiore flava: alarum marginibus grisescentibus: cauda unicolore: subtus albus, lateraliter grisescens, tectricibus subalaribus flavidis: rostro et pedibus nigris. Long. tota 8·5, alæ 4·0, caudæ 3·5, tarsi 0·9.

Hab. Ins. Portoricensi.

Affinis *P. caudi-fasciato* (ex Jamaica et Cuba) et ejusdem formæ, sed caudæ fascia basali carens et colore corporis supra fusco nec nigricanti-griseo.—P. L. S.

24. **Eulampis holosericeus**, Gould, Mon. Troch. ii. pl. 83.

Of the three species of Humming-bird that I obtained in Martinique and Dominica, this is in Dominica the most abundant, and in Martinique the least so. It frequents open places where there are flowering plants and shrubs, upon the blossoms of which it seems to feed. In Martinique it is called *Colibri émeraude.*

25. **Orthorhynchus exilis**, Gould, Mon. Troch. ii. pl. 207.

This pretty little species is very common both in Martinique and Dominica. In both islands the males were more numerous than the females. Its Creole name in Martinique is *Colibri oiseau-mouche.*

26. **Crotophaga ani**, Linn.

I did not meet with this bird either in Martinique or Dominica; but it was common at St. Thomas and in Porto Rico.

27. **Saurothera vieillotii**, Bp.

Abundant in Porto Rico, especially in the forests. Both this and the next species are, in Porto Rico, called *Pajero bobo* (*Anglicè,* Foolish Bird). This species has the naked skin round the eyes of a bright red colour.

28. **Coccyzus nesiotes**, Cab. & Hein. *C. dominicus,* Sclater, Cat. A. B. p. 323.

Equally abundant in Porto Rico as the preceding species. I shot and skinned a female, early in May, which contained an egg ready for laying; the shell was quite hard, and of a pale-blue colour. This bird in general appearance is very like the next species, from which, however, it is readily distinguished by its much smaller size.

29. **Coccyzus seniculus**, Vieill.

This species I found tolerably common in Dominica; but I did not see it elsewhere. The crop of an individual that I skinned contained a large ball, composed of the remains of large grasshoppers and tree-crickets. Creole name, *Coucou manioc.*

30. **Melanerpes portoricensis** (Vieill.).

This Woodpecker is very common in Porto Rico wherever there are large old trees. I did not see or hear of any of the Woodpecker family (*Picidæ*) in Martinique or Dominica.

31. CHRYSOTIS VITTATA, Bodd.

Abundant in Porto Rico, where it is generally to be seen in small flocks.

32. CONURUS XANTHOLÆMUS, Sclater.

Obtained in St. Thomas.

33. COLUMBA CORENSIS, Gm.

I obtained a specimen of this fine large Pigeon in Dominica, where it is pretty common on the mountains and in the forests. It also occurs in Porto Rico, where, however, it is less abundant than the next species. In Dominica it is called *Ramier*. Legs and feet dull red.

34. COLUMBA LEUCOCEPHALA, Linn.

Very abundant in Porto Rico.

35. ZENAIDA MARTINICANA, Bp. Consp. ii. p. 82.

This Dove is very common both in Dominica and Porto Rico, and probably in Martinique also, though I did not happen to see it there myself. Legs and feet bright red.

36. GEOTRYGON MONTANA, Bp. Consp. ii. p. 72.

This species is not uncommon in Porto Rico, where it by no means confines itself to the mountains, as its name would imply; for I have frequently seen it in low-lying bush and forest near the coast. Legs and eyelids bright red. This bird is generally to be seen on the ground, and not in trees.

37. CHAMÆOPELIA TROCHILA, Bp. Consp. ii. p. 77.

Very abundant in Porto Rico and St. Thomas, from the latter of which islands my specimens were obtained. This species is very like *Chamæopelia passerina* of North America, but very unlike any of the species of Ground-Dove I obtained in Trinidad or Venezuela.

38. ARDEA CÆRULEA.

Common in Porto Rico.

39. BUTORIDES VIRESCENS.

Abundant in Dominica and Porto Rico. Legs and feet yellow.

40. PORPHYRIO MARTINICA.

This bird, which in size and habits much resembles *Gallinula* *chloropus* of Europe, is very abundant in Porto Rico, in suitable localities.

41. Podilymbus dominicus.

I once came upon several of these birds swimming about in a broad deep ditch in Porto Rico, and succeeded in shooting one. This bird differs from the true Grebes (*Podiceps*) in having the feet semipalmated as well as lobated, and also in the form of the bill, which is much deeper than in that genus.

42. Dendrocygna autumnalis.

Abundant in Porto Rico, where it breeds.

43. Larus atricillus. American Black-headed Gull.

This is the only species of Gull that I saw in the West Indies, and I did not see this south of St. Thomas. There, however, and at Porto Rico it was very numerous, especially in the harbours of St. Thomas and St. Juan de Porto Rico.

44. Sterna fuliginosa. Sooty Tern.

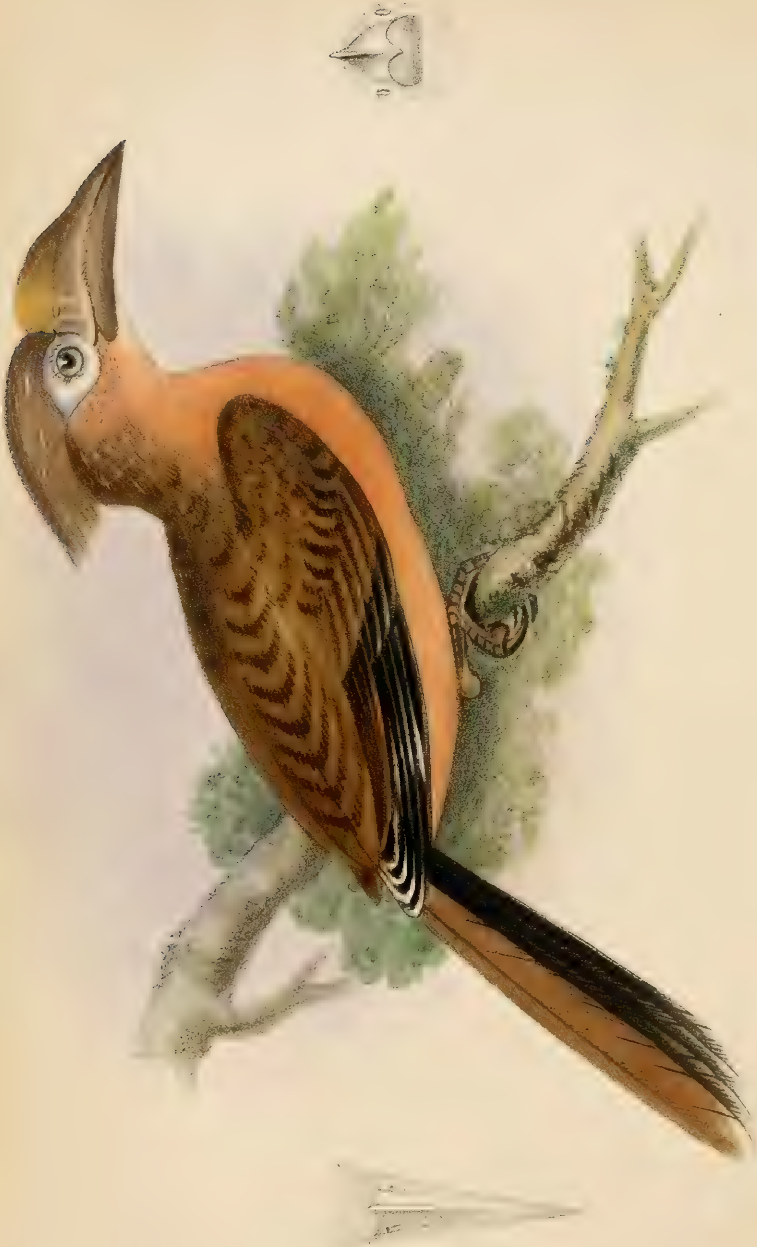
In the market at St. Thomas I saw a large basketful of the eggs of this species, which had been taken at Tortola; so I bought a dozen of them for half-a-dollar.

45. Phaëthon æthereus. Red-billed Tropic-Bird.

Tropic-Birds breed in great numbers in Martinique, in the high cliffs, composed of volcanic ash, which extend from the town of St. Pierre, along the coast towards Fort de France. I was there at the end of March, and I used to watch them flying in and out of their circular holes in the vertical face of the cliff. I tried to procure specimens both of the birds and their eggs, but without success. I could see their *red* bills quite plainly; so no doubt the species was *Phaëthon æthereus.* I also frequently saw Tropic-Birds flying about the harbour of St. Juan de Porto Rico.

46. Fregata aquila. Frigate Pelican.

I used often to see this graceful bird, soaring high in the air, among the Windward Islands. I was never fortunate enough to see it attack other birds to rob them of their prey; but I have seen it plunge into the sea, as if fishing on its own account. The



roadstead of Pampator, in the Island of Margarita, is the locality where I found the greatest number together.

47. **Sula fiber.** Dusky Gannet.

Occasionally seen among the Windward Islands; but much more frequently on the coast of Venezuela.

48. **Pelecanus fuscus.** Dusky Pelican.

Abundant everywhere in the West Indian seas.

XIII.—*On the Hornbills of India and Burmah.*

By Lieut.-Col. S. R. Tickell.

(Plate III.)

1. **Toccus tickelli.** (Pl. III.)

Buceros tickelli, Blyth, J. A. S. B. xxiv. pp. 266, 285, et xxviii. p. 412.

Dimensions, ♀.—Length $2' \, 2\frac{3}{4}''$; spread $3' \, 1''$; wing $1'$; tail $11\frac{1}{4}''$, exceeding wing by $7\frac{1}{2}''$; bill $4\frac{9}{16}''$; tarsus $1\frac{13}{16}''$; middle toe $1\frac{1}{2}''$; greatest vertical depth of bill and casque $2''$.

Form.—As in the smaller Hornbills. Neck a little more plumose. A well-developed recumbent blunt crest. Bill and its elevated ridge as in the young of *Buceros* (*Meniceros*) *bicornis*. Edges serrated by erosion, but without hiatus. Culmen for basal half of bill compressed into a keel-like process, rising rather abruptly from forehead, and then inclining downwards and forwards subparallel to the arch of the bill, with which it amalgamates at about $2''$ from tip, the conjunction becoming more and more abrupt by age, but not exceeding an angle of 45° with the arch of the bill. Orbital space bare. Tail pretty long and rounded, centre exceeding outermost rectrices by $1\frac{3}{4}''$. For the rest the details are typical, as in *B. birostris.*

Colour, ♂ & ♀.—Iris grey; brown next pupil. Bill dark horn; basal half of casque or culminar protuberance dull orange. Orbital skin pale smalt. Legs dark-greenish horn, with pale soles. Head bistre-brown, shafted pale. Upper parts umber-brown, rather dull and opake, with a tinge of olive, and glances of dull green in half-lights. Secondaries and primaries greenish black, the latter with their outer margins midway, for a short space, and their tips whitish. Two central rectrices as back, with pale tips; rest greenish black, with pale tips. All under-parts ferruginous, rather pale, brightest on throat, dull and clouded with vinous ashy on belly. Auriculars striated bistre-brown, as are sides of neck obscurely. Tertials as upper parts. Lining of wings dusky and tawny.

The male is two inches longer than the female.

The specimen figured is a female, obtained from the Tenasserim Hills, January 1855. The bird has no vulgar specific, being unknown to the natives.

The district of Amherst, in the Tenasserim Provinces, is longitudinally traversed for its whole extent, north and south, by a range of mountains (a branch of the Yomatoung of Burmah), which proceeds southwardly, through Tavoy and Mergui, into the Malayan peninsula, of which it forms as it were the backbone. The range is composed of numerous ridges, more or less tortuous, rising along the middle to peaks of from 6000 to 8000 feet in height, and occupying in breadth a space of about 40 miles. The hills are exceedingly steep, with narrow profound valleys, and everywhere clothed with dense forest and underwood, except on some of the loftiest summits, which are bare granite, scantily clad with coarse grass and scrubby bushes. But on the lower spurs, and especially in the plains at their feet, the soil, watered by numerous brooks and streams, and covered by vegetable detritus washed down from the uplands, is exceedingly rich, and nourishes the growth of trees, which attain prodigious dimensions. The "Thengan" (*Hopea odorata*), "Toungbing," and "Kathȳkkha" trees, used by the Burmese and Talâings for making "dug-outs" of 50 tons and upwards, rise to 150 feet before sending out a branch, their summits attaining a height of 230 feet, and their trunks smooth, round, and perpendicular, measuring near the ground from 10 to 12 feet in diameter.

It is exclusively on these giants of the forest that this species of Hornbill rests and feeds, never being met with in jungle where the trees are of ordinary size. I met with them from about the base of the hills to as high up as 4000 feet above the sea-level, but not beyond. They appeared less rare on the easterly skirt or Siam side of the range, occurring in pairs or small parties of five or six, incessantly calling to each other in loud plaintive screams, "*whey-wheyo, whey-wheyo,*" and, while engaged feeding, keeping up a low murmuring cackle like Parrots. Their flight is smooth and deliberate, like that of *Buceros pusaran,* not with alternate flappings and sailings like *B. albirostris, B. pica,* or *B. bicornis;* and it is performed at great elevations, especially when crossing over from mountain-top to mountain-top. Keeping thus ever at immense heights, and being withal as quick-sighted and wary as the rest of the genus, it may readily be imagined how difficult this bird is to procure with the gun. I succeeded, in fact, in "bagging" but one specimen, and wounding another, which escaped, during my cold-weather excursion into the Tenasserim Mountains in January 1855. I procured two more, some years subsequently. In the case of the specimen here figured, its companions showed much excitement when it fell, coming boldly down to the lower branches, with loud screams, and remaining within easy shot while I was reloading. This occurred at Thengangyee sakán (literally, "halting-place of great Thengans"), a spot in the forest so named from the huge Thengan-trees about it, situated on the eastern skirt of the range above described. This is one of the resting-places on the wild path pursued by travellers from the Shan states of Yahan, in Siam, to Moulmein. On revisiting the same spot in March 1859, not a single bird of this kind was to be found there, or in the hills around. Being a frugivorous bird, it has to make partial migrations, as its food fails or passes out of season in one place, to where some other kind of fruit is ripening—a compulsory habit, common also to all the *Treroninæ* or fruit-eating Pigeons. I fell in with them, accordingly, during the last-mentioned period, in a very different locality, in the flat forest lying along the south of the Houngthrau River, considerably to the south of Thengangyee sakán, and on a much lower level. They were on these occasions so wild as not to allow approach within gunshot; but on my last day's march, which led through these forests to the banks of the Houngthrau, where my boats were in readiness to take me down to Moulmein, I came across three of these birds near a Karén clearing. To my surprise, they allowed me to approach within a long shot. The first bird I fired at fell from his perch (on a vast tree) into a thicket. Its companions did not fly away; and my second barrel brought down another, which hitched in the tree, to all appearance desperately wounded. I, of course, congratulated myself on having secured two of this very rare species; but, to my intense chagrin, when my people had come up to search for and secure the prizes, the second bird flew away as if unscathed, and the first was not to be found! The Karéns declared they had seen it fly away! And, in truth, the voices of all three were presently afterwards heard from the interior of the jungle. The heavy morning dew made any diversion from the path equivalent to a plunge in the river; so I sent a Burman follower, whom I had taught the use of a gun, after the fugitives, and he succeeded in fairly bagging two of them. They proved to be males, not differing perceptibly in plumage from the female here figured.

This last is now, I have to add, in the museum of the Asiatic Society in Calcutta.

Without taking up the pages of 'The Ibis' by descriptions of birds already known to science, I am desirous of adding such details as appear to have escaped other ornithologists, or to be unknown to them, of a class of birds which, by their great size and grotesque forms, constitute so striking a feature in the forests of India.

2. BUCEROS (HOMRAIUS) CAVATUS, Hodgson.

Of this Hornbill Hodgson has left little to say. I have kept several specimens alive, and have been an eye-witness of the singular mode of incubation of the bird. The young have the casque no more developed than in the subgenus *Toccus* of Lesson. At the commencement of the second year the anterior extremity begins to separate from the culmen, and during the third year assumes the transverse crescent shape, sending the two edges or cornua outwards and upwards, while the whole anterior portion gets broader, till it is equal to the hinder part. But the casque is not fully developed till the fifth year. Nevertheless the brittle and quasi-osseous edging to the bill is perfected in the second year, becoming quickly eroded by wear and tear. In Nepal, according to the natives, the "Homrai" or "Bun-rao" (King of the Woods) ascends the mountains to near the snows during the hot weather. In the Tenasserim Provinces, however, I have found it so late as April in the lowest and hottest forests, and never higher than 2000 feet above sea-level. Our *hill* Hornbill in that country is *B.* (*Aceros*) *nipalensis* of Hodgson, which I have shot on a spur of the great Mooleyit peak, full 3500 feet above the sea.

All the known species of the genus *Buceros* may be divided into two groups as regards their flight. *B. cavatus, B. pica, B. albirostris, B. affinis,* and *B. bicornis* proceed with quick, short flaps, alternating with soarings or sailings, on outstretched motionless pinions; while *B. tickelli, B. nipalensis,* and *B. pusaran* have a heavy, steady, ordinary flight. The voice of *B. cavatus* is prodigiously loud. Its roars re-echo through the hills, and it is difficult at first to assign such sounds to a bird. As in other species of which the notes are sharper, the noise is produced both in exhaling and inhaling. *B. cavatus* when caught young is easily tamed, but becomes bold rather than gentle, menacing a too near approach with its huge bill, which inflicts severe bites. Those I have had in my possession would not suffer themselves to be caressed, as the smaller species *B. albirostris* is fond of doing. They flew about the garden and grounds, resting on large trees or the roof of the house, and often coming to the ground, where they progressed by sidelong hops, squatting occasionally on their heels (or elbows) and searching for food in the grass, where they picked up and swallowed insects and worms. I once saw one of them seize a frog; but after nipping it and tossing it about, the bird relinquished it. Early of a morning, when the dew was heavy on the ground, I have seen this bird go flapping through beds of weeds or long grass till thoroughly saturated, when it would sit in the sun, with expanded wings, drying itself like a Vulture or Cormorant. This species, as well as *B. albirostris* and *B. bicornis,* has the same singular palsied jerk of the neck in moving the head from side to side or up and down—a peculiarity owing perhaps to the rigidity of the connecting ligaments of the cervical vertebræ, as described by the late Dr. Bramley when residency-surgeon in Nipal. In a captive state, I have never heard this bird utter more than a little murmuring grunt. Its capacity of swallowing is prodigious: a whole plantain can be gulped down without an effort. In picking fruit off a tree, it tosses it up into the air, and lets it fall down the throat. It eats lizards readily, not only from the hand, but will search for and seize them. The unfledged or half-fledged nestling is constantly uttering a feeble croak, alternating with a piping, whistling noise. A remarkable trait I observed in one or two of the birds in my possession was their fondness for rain. They would remain for hours exposed to the heaviest shower, and sit perfectly saturated, with the water trickling from the end of the beak in a ridiculous manner.

In describing the singular mode of incubation of this bird, I cannot do better than transcribe the account written by myself at the time and place of observation:—

"Kyīk, on the Houngthrau River, February 16, 1855.—On my way back to Moulmein from Mooleyit (a celebrated peak in the Tenasserim range), when halting at Kyīk, I heard by the merest chance from the Karén villagers that a large Hornbill was sitting on its nest in a tree close to the village, and that for several years past the same pair of birds had resorted to that spot for breeding. I lost no time, accordingly, in going to the place next morning, and was shown a hole high up in the trunk of a moderately large straight tree, branchless for about 50 feet from the ground, in which the female, I was told, lay concealed. The hole was covered with a thick layer of mud, all but a small space, through which she could thrust the end of her bill, and so receive food from the male.

"One of the villagers at length ascended with great labour, by means of bamboo-pegs driven into the trunk, and commenced digging out the clay from the hole. While so employed, the female kept uttering her rattling sonorous cries, and the male remained perched on a neighbouring tree, sometimes flying to and fro and coming close to us. Of him the natives appeared to entertain great dread, saying he was sure to assault them; and it was with some difficulty I prevented them from shooting him before they continued their attack on the nest. When the hole was enlarged sufficiently, the man who had ascended thrust in his arm; but was so soundly bitten by the female, whose cries had become perfectly desperate, that he quickly withdrew, narrowly escaping a tumble from his frail footing. After wrapping his hand in some folds of cloth, he succeeded with some trouble in extracting the bird, a miserable-looking object enough, wasted and dirty. She was handed down and let loose on the ground, where she hopped about, unable to fly, and menacing the bystanders with her bill; and at length ascended a small tree, where she remained, being too stiff to use her wings and join her mate. At the bottom of the hole, nearly 3 feet from the orifice, was a solitary egg, resting upon mud, fragments of bark, and feathers. It was of a dirty yellowish brownish-white, spindle-shaped or pointed at either end, and of a coarse surface, indented with numerous pores. Longitudinal and transverse axes $2\frac{11}{16}''$ and $1\frac{7}{8}''$ respectively. In the hole were numerous berries, resembling the wild 'jamoon,' in all stages of decomposition. The female, I should remark, was deeply stained with a yellow exudation from the uropygial gland, frequently observed on the feathers of this species, *B.* (*Hydrocissa*) *pica*, and *B. albirostris*."

3. BUCEROS (HYDROCISSA) PICA.

4. BUCEROS (HYDROCISSA) ALBIROSTRIS.

These two nearly allied species inhabit the forests respectively of India and of British Burmah. The second-named is the more numerous of the two, as far as my own observations lead me to judge. I have met with *B. pica* in the forests of the jungle mahals, Midnapore, Singbhoom, and Chota Nagpoor; but it is by no means common. *B. albirostris*, on the eastern side of the Bay of Bengal, is much more frequent. The manners of the two species are so much alike, that they hardly need separate description; with *B. albirostris*, however, I am now familiarly acquainted, having had two or three of them tame, in confinement and at large; for this bird becomes so soon domesticated as not to require imprisonment, if it be brought to the house from the nest. It remains perched on a verandah-rail, soon becoming accustomed to the inmates, and readily takes food from the hand. One or two pet ones are to be seen in almost every village in Arakan. Those

I possessed used to roost on the roof, flying in and out of the house at pleasure. One in particular, which we kept for nearly two years, became a great favourite. It was fond of being patted and stroked, and would beg for the luxury, throwing its head back to have the throat scratched or tickled. During the day it usually sat under the portico, hailing every arriver with loud screams, and unalarmed by the noisy approach of carriages. It would fly to me or to the children from any distance in the garden or grounds; and especially attached itself to the young folks, allowing them to scratch its neck, throwing itself into absurd attitudes, as if coaxing them to continue, and never on any occasion hurting them with its formidable bill. Thus the bird, grotesque and ugly as it was, became associated, in our minds, with its pretty playmates, and an inseparable appendage to their little sports. But alas! like all pets, this one met with an untimely end. It was found by the servants early one morning on the roof of the house, dead, with the marks of teeth in its breast, inflicted probably by some marauding cat which had surprised it during sleep.

Like the rest of the genus, *B. albirostris* is nearly omnivorous, but prefers fruit to other food. According to Jerdon, it is found in Northern India, Midnapore and Rajmahal, and Monghír on the Ganges. My own experience does not corroborate this. The breeding-time in Arakan and the Tenasserim Provinces is in July or August; and the female is said to lay two to four eggs in the hollow of a tree, without any nest. The eggs are white. I have never seen them.

5. Buceros (Rhyticeros) pusaran (Raffles).

This species is very numerous in the Tenasserim Provinces and in the inland forests of Arakan. Its presence is soon known, on entering the lofty woods to which it resorts, by its loud and as it were menacing voice, uttered in a short, gruff dissyllabic croak, "*Kukkuk*," which it repeats at intervals, either when perched or when flying over the tree-tops. Its powers of flight are much more extensive than in any other species of the genus. I have seen parties of five or six of these birds in Arakan, high in air, flying over the sea; and have watched them till they melted from sight into the horizon, as if they had finally left the shore. Where these excursions end it would be curious to know; for the bird is not found on the west shores of the Bay of Bengal. Its most northerly habitat appears to be the hilly jungles on the highest parts of the Koladyn River in Arakan; but whether it extends into Chittagong or the hills of Cachar and Munnipore I know not. They seem to get more and more numerous towards the south, and on the Houngthrau River, which rises in the southernmost Shan states of Siam, are quite common. The flight of this bird, unlike that of the species before described, is slow and regular; and the rush of the air through its pinions so loud as to be heard at half a mile distance. This remark applies also to *B. cavatus*. It is generally wild and wary; at times, however, when feeding on the fruit of some large *Ficus* (its favourite resort), it will allow approach within gun-shot, and is so voracious as to return two or three times to the same tree after being as often shot at. They settle generally on the large branches near the summit, jumping from place to place, and greedily picking off and swallowing the soft ripe figs of the Banian, Bur, Goolur, Peepul, Pâkhur, or similar trees of the *Ficus* family. They feed usually in silence, and mix indiscriminately with the numerous fruit-eating Pigeons (*Carpophagi*, *Trerones*, &c.) and Monkeys (*Hylobates lar*, *Semnopithecus phayrei*, *Inuus nemestrinus*, &c.), which, similarly engaged, constitute a singularly varied crowd amongst the lofty branches of these gigantic trees, and a picture so remarkable as not to be easily forgotten by the observer.

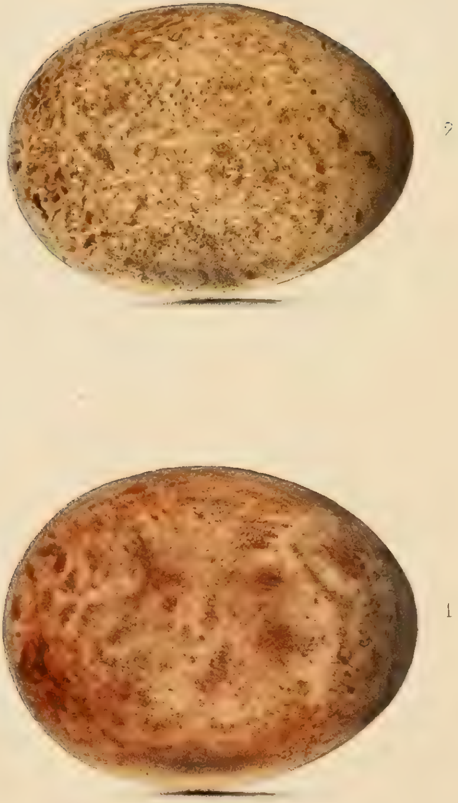
The pouch, peculiar to this species, which is plainly visible as the bird flies overhead, with neck extended, appears to be analogous to that of the Adjutant (*Leptoptilos argala*), and connected rather with the breathing-apparatus than the alimentary canal; but I have never dissected it, and speak entirely from inference.

The female incubates generally about the end of the cold weather, laying two or three eggs in some convenient hole high up the stem of a tall tree in the deepest forests. The Karéns say that the female is not immured while sitting, as is the case with *B. cavatus*. An egg, brought to me towards the end of February 1855, is pure white, opake, and coarse on surface; size 2″ by

$1\frac{1}{2}''$. I was on that occasion on my way down the Houngthrau, a clear, pretty stream, shaded by lofty timber, eddying in deep pools under high gravelly banks, breaking into foam and tumbling over boulders of sandstone, or rippling along shallow beds of clean pebbles and silvery sand. To the last-named spots, just before or during the short twilight of a tropical evening, these Hornbills used to resort in great numbers, allowing my boat to approach pretty near, as it glided down the stream. I could thus watch them on the little sand-flats, hopping freely enough along the ground, and delving their beaks in as if searching for worms or molluscs; while some stood up to their bellies in the water, apparently much enjoying their bath. As the dusk gathered over the river, I remarked them resorting to roost on the loftiest trees fringing its course. The Karéns who live in these virgin forests say that between the "Yowng-yowng" (*B. cavatus*) and the "Owkhyen net" (the present subject) there is always open war; and, in truth, I do not remember to have remarked the two species anywhere together.

6. BUCEROS (ACEROS) NIPALENSIS (Hodgson).

I have very little to add to what is already known of this species from the writings of Hodgson, save that it extends as far south along the south-east Himalayan spurs as the mountains of Tenasserim. I shot a very fine male specimen on the 27th February 1859, on the great spur leading to Mooleyit peak, at an elevation of about 3500 feet. It had crossed over the deep valley separating me from the Napulloo range to the south, and was just about to top the ridge where I was journeying along, when I brought it down by a snap shot through the trees. I sent the skin to the Asiatic Society's Museum in Calcutta, as it was the first and only individual of the species ever met with in British Burmah; but it differed in nothing noticeable from those procured in Nepal, where (in the Teraïe) it is by no means uncommon. The flight is as in *B. pusaran*, and the voice also, save that its croak is *mono*syllabic.



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M & N Hanhart Imp.

EGGS OF FALCO SACER

XIV.—*Note on the Nesting of the Lanner Falcon* (Falco lanarius, *Schlegel*). By J. H. Cochrane.

(Plate IV.)

On the 26th of March, 1863, I left my Nile-boat, and set out with some friends to visit the Pyramids of Ghizeh. While they explored the wonders of the place, I walked towards the three trees to the left of the Sphinx and Third Pyramid in hopes of finding something worth shooting, as on a previous visit, in 1862, I had there observed a pair of what I had imagined to be *Falco peregrinus*. In this I was unsuccessful. A Bedouin, who had followed me for some time, on hearing what I wanted, volunteered to get me four young birds of what he called "Sagr el h'ohr," and forthwith ran off to find them. Feeling very tired and decidedly sceptical about the Bedouin's success, I paid very little attention to him; but, on his return, my curiosity was much excited by his saying there were no young birds—only eggs. Of course I was all anxiety to see them, and followed him to the south side of the Small or Third Pyramid. A short but steep climb brought one up to the nest (if it was worthy of the name)—a few feathers and still fewer sticks in a hollow on one of the steps, about thirty feet from the top, and on them four eggs. I saw both the birds—one of them very distinctly. Most stupidly, I tried a long shot, missed, and lost all chance of satisfactorily identifying them. I feel almost sure they were not *Falco peregrinus*. The Arab described them as having a red head. Two of the eggs were addled, two incubated.

On the 3rd of April following, on my return from a fortnight's trip down the Rosetta branch of the Nile, the same Bedouin, whom I had asked to look out for nests for me, brought me a fine living female *Falco lanarius* and three eggs, which he had taken on the Dashoor Pyramid. The eggs were much incubated, and I unfortunately broke one in blowing it. The Bedouin said he had taken the bird by throwing a cloth over it at night, and in so doing had broken one of the eggs, which originally had been four in number. These eggs much resemble those before mentioned. The bird itself was brought by me to

England alive, and is now in the gardens of the Zoological Society of London.

[Mr. W. C. Hewitson has, with his usual kindness, drawn the accompanying Plate, in which what we believe to be the first well-identified eggs of *Falco lanarius*, Schlegel, are depicted.

Fig. 1 represents one of the eggs obtained, April 3rd, 1863, from the Pyramid of Dashoor, along with the female now alive in the Zoological Society's Gardens.

Fig. 2 represents one of the eggs obtained from the small Pyramid of Ghizeh, 26th of March, 1863.

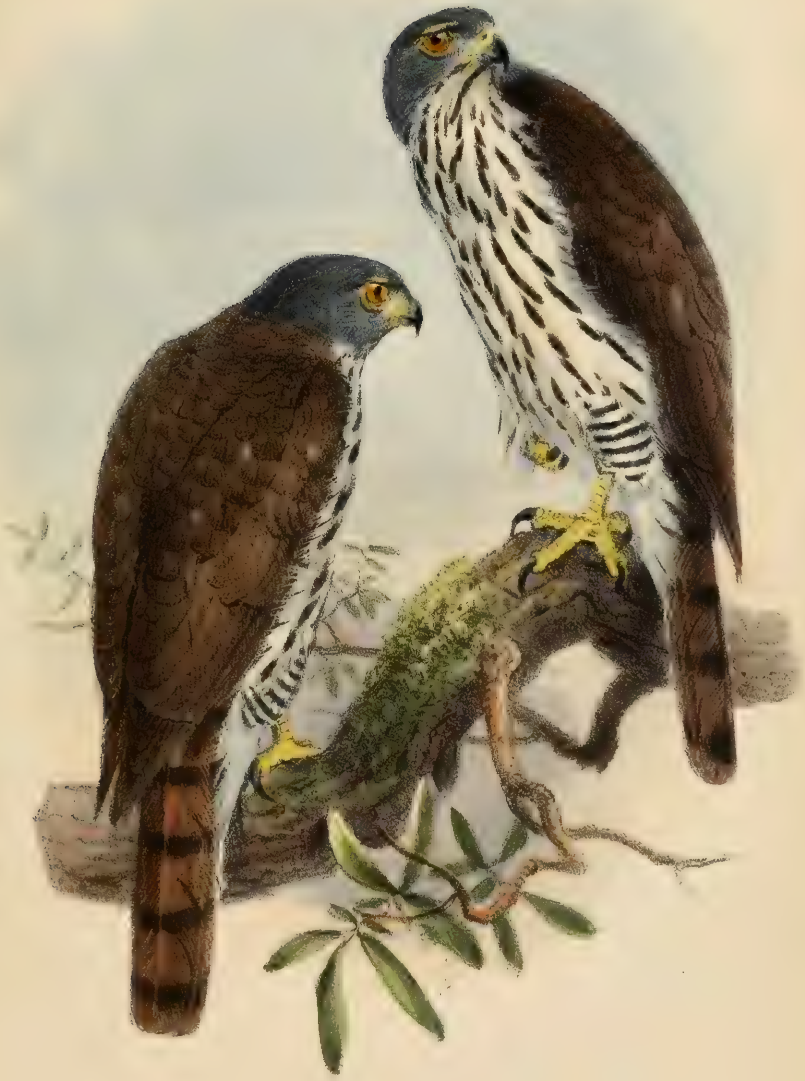
We may remark that we believe that Egyptian specimens of *Falco sacer* are not distinguishable from the European form which has been termed *Falco feldeggii*. On the other hand, Abyssinian examples (*Falco tanypterus*, Licht.) are decidedly smaller and darker in colouring.—Ed.]

XV.—*Note on* Astur griseiceps, *Schlegel*. By A. R. Wallace, F.Z.S., &c.

(Plate V.)

This beautiful Hawk, which has been recently described by Dr. Schlegel (Muséum d'Histoire Nat. des Pays-Bas, "Astures," p. 24), presents us with another case of the island of Celebes possessing its own restricted species. The well-known *Astur trivirgatus* of Temminck ranges over Sumatra, Java, Borneo, the Philippine Islands, and, with but slight modification, over the whole of India and Ceylon; but the moment we pass over into Celebes, we find it represented by the allied yet perfectly distinct species now figured.

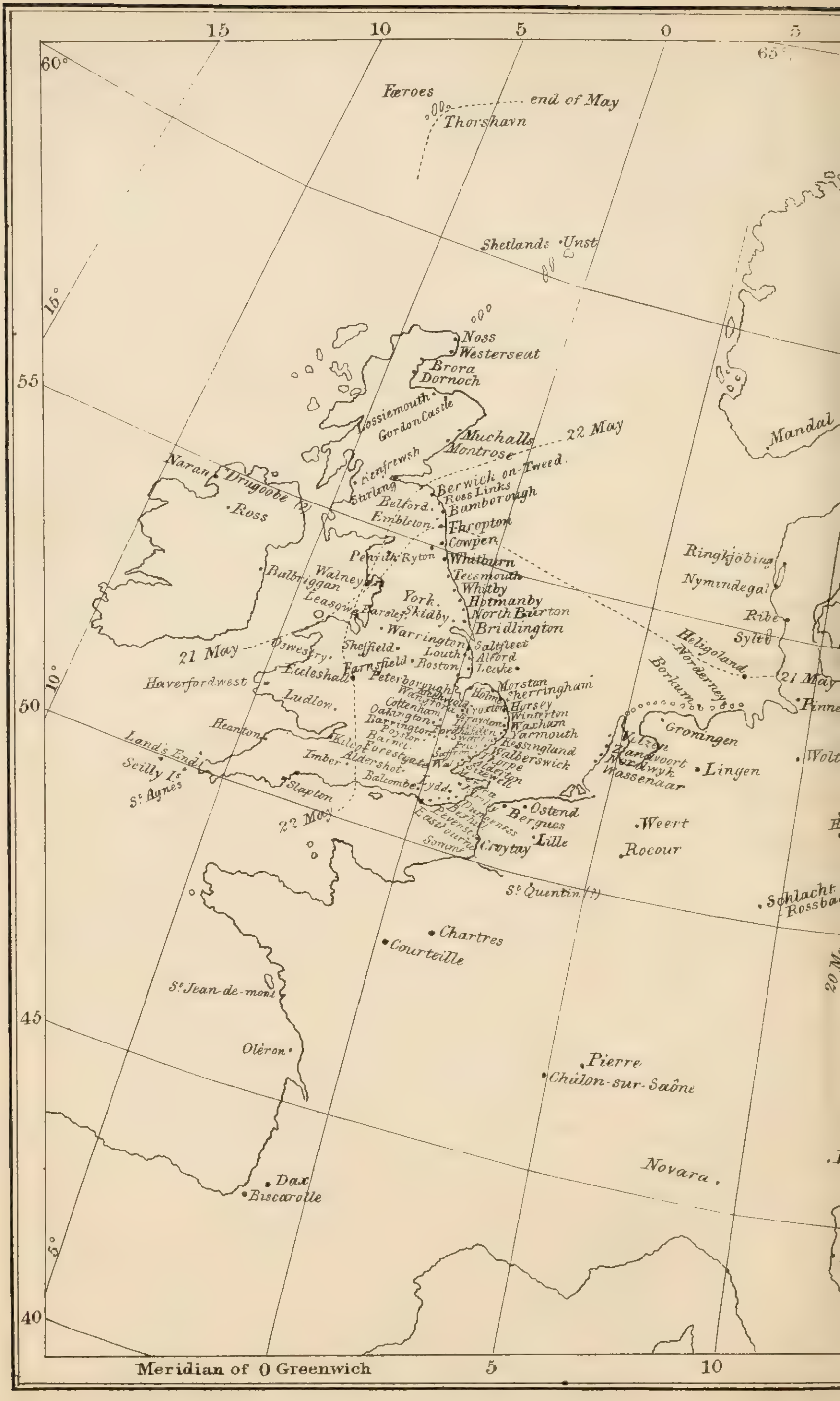
The specimens of *Astur griseiceps* in the Leyden Museum are from the northern part of the island, where I also found it. I likewise obtained one specimen of this species in the south, near Macassar. It seems, however, to be a rare bird, as the Leyden Museum contains only three specimens, obtained from Forsten, who collected for nearly two years in North Celebes; and I myself got the same number during about nine months' assiduous collecting in various parts of the island.



J. Wolf del. et lith.

M & N Hanhart

ASTUR GRISEICEPS.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Ryton
Whitburn
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Bridlington
Balbriggan
Walney
Leasowe
Farsley
York
Skidby
Warrington
Sheffield
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Saltfleet
Alford
Leake
Roston
Oswestry
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Eccleshall
Farnsfield
Haverfordwest
Ludlow
Peterborough
Wangford
Cottenham
Oakington
Barrington
Royston
Barnet
Kilcot
Forestgate
Imber
Aldershot
Balcombe
Lydd
Heanton
Land's End
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St Agnes
Slapton
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Croxton
Morston
Sherringham
Horsey
Winterton
Waxham
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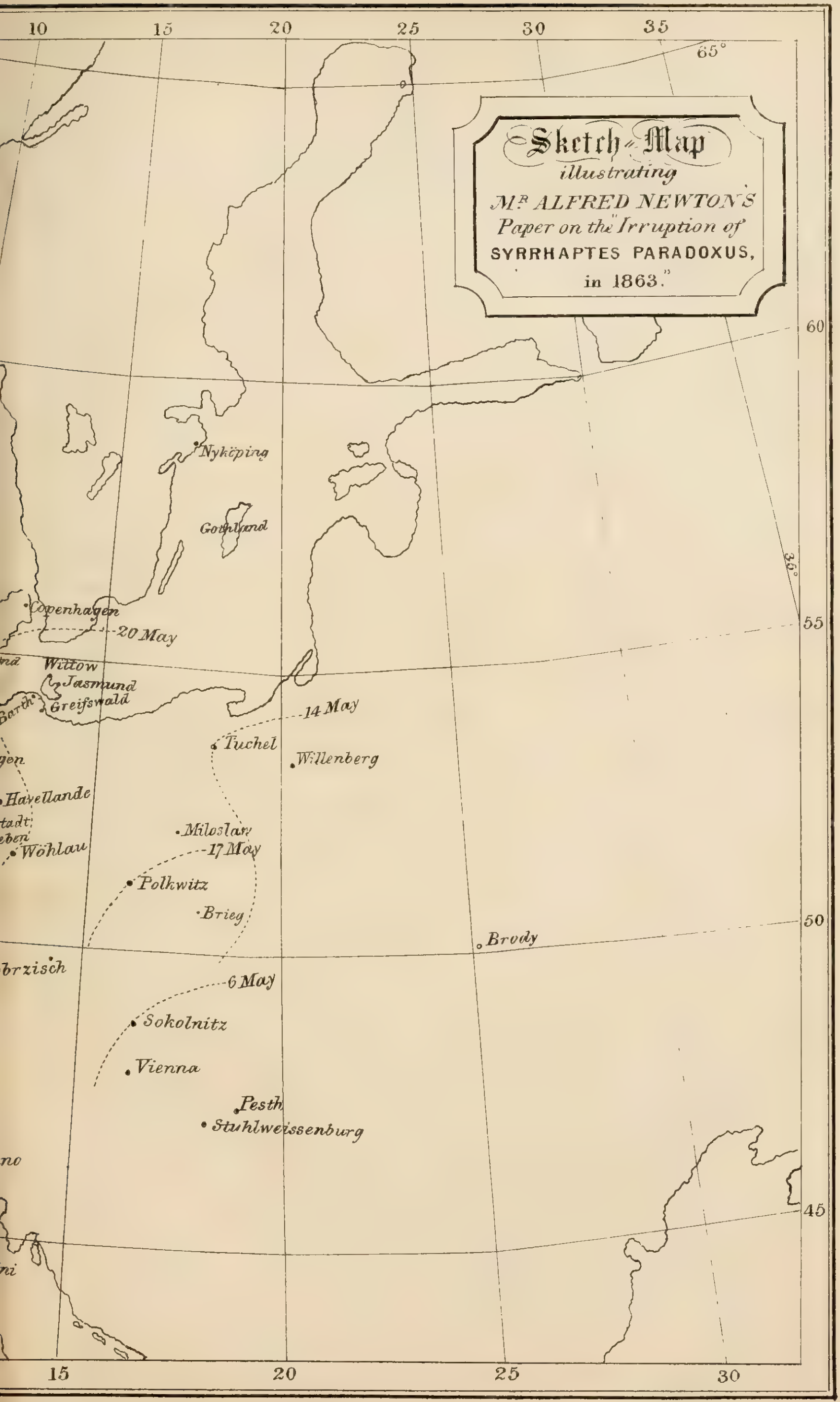
Sketch Map
illustrating
Mr ALFRED NEWTON'S
Paper on the "Irruption of
SYRRHAPTES PARADOXUS,
in 1863."
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36°
Nyköping
Gothland
Copenhagen
20 May
Wittow
Jasmund
Greifswald
Barth
14 May
Tuchel
Willenberg
Havellande
Wohlau
Miloslaw
17 May
Polkwitz
Brieg
Brody
6 May
Sokolnitz
Vienna
Pesth
Stuhlweissenburg
15
20
25
30

W. Metcalfe Litho Cambridge

XVI.—*On the Irruption of Pallas's Sand-Grouse* (Syrrhaptes paradoxus) *in* 1863. By Alfred Newton, M.A., F.L.S., F.Z.S.

(With a Sketch-Map—Plate VI.)

For many reasons I should wish still longer to defer noticing in the 'Ibis' the Tartar invasion of which Europe was last year the scene—an invasion which is certainly unparalleled in the annals of ornithology, but chiefly because the record of observations is still incomplete, especially on that side of the Continent first reached by the wanderers. On the other hand, an account of the irruption has been long promised to the readers of this Journal, and having now collected a very large mass of intelligence respecting it, I think I am in a position to place some of the particulars before the public. Besides, it seems to me that the more the late visitation of *Syrrhaptes paradoxus* is written about and talked about, the more chance there is of gaining fresh information concerning it. Knowing, then, that I am very far from having exhausted the subject, but hoping still further to excite the attention of ornithologists to it, I now attempt to discharge the duty which our Editor has laid upon me.

With the general history of this remarkable bird I presume all the readers of the 'Ibis' are pretty well acquainted; for Mr. T. J. Moore's excellent paper in our second volume ('Ibis,' 1860, pp. 105–110) contains, as I before have had occasion (P. Z. S. 1861, pp. 203, 204) to remark, nearly all that was then to be said on the subject. It is only necessary here to recapitulate that the species was first brought to the notice of Pallas by Nicolas Rytschof as a dweller on the Kirgish Steppes, which may be taken as extending eastward from the northern half of the Caspian Sea to the regions round Lake Balkach. In 1809 Professor Fischer, of Moscow, received through the then Governor of Irkoutsk, Von Treskine, two well-preserved examples of this species from a much more eastern locality—the great steppes of Gobi (Mém.Mosc. iii. p.271)*. It was from a drawing and description of one of these birds, sent him by Fischer, that Temminck (Hist. Pig. et Gallinac. iii. pp. 282–287) took his account. In 1825 naturalists learned from M. Drapiez (Dict. Class. d'Hist. Nat. viii. p. 182) that M. Delanoue had met with this species on the Chinese frontier of the Russian empire. He is stated to have had several opportunities of studying its habits, and to describe its nidification; but he makes, as I shall presently show, one assertion not borne out by later investigation.

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* Fischer at once saw that the species ought not to be included in the Linnean genus *Tetrao*, and states that he communicated his views on this point to Pallas, and subsequently (April 1810) to Temminck. Had he then published his paper, his proposed name *Nematura* would have taken

In 1853, in a list of the birds met with at Sarepta, on the Lower Wolga, Herr Möschler (Naumannia, iii. p. 305) enumerated *Syrrhaptes paradoxus*, attaching to its name a symbol indicating that it was "very rare" there. Considering what Professors Eversmann and Eichwald had ascertained concerning its geographical range, the fact is not of a surprising nature; but this seems to be the earliest authentic record of its actual occurrence in Europe, though Prince C. L. Bonaparte, moved perhaps by a lucky spirit of prophecy, had in 1838 (Comp. List, p. 42) included it as a bird of this quarter of the globe.

So passed on the time until 1859, when, as all my readers will be aware, four examples of this bird were killed, and others seen, in Western Europe *. But these were not all that were obtained in that year; for I am informed by Mr. George Jell, of Lydd in Kent, that he stuffed a specimen which was killed, in November 1859, at New Romney in that county, and is now in the possession of Mr. Simmons, a gentleman living at East Peckham, near Tonbridge. I also find that, in the month of May

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precedence of Illiger's *Syrrhaptes*, which stands from 1811; but the third volume of the Moscow 'Mémoires' bears on its title-page 1812. *Heteroclitus* of Vieillot is long subsequent in date, though many of the French ornithologists persist in using it; it is also objectionable from its resemblance to *Heteroclites*, preoccupied in conchology by Lamarck.

* I observe that one or two writers of late have misquoted the dates and localities of these occurrences. It may be as well, therefore, to repeat here, that one was killed at Walpole St. Peter's, in Norfolk, early in July 1859; on the 9th of the same month a second, near Tremadoc, in North Wales; on the 23rd, a third, near Hobro, in Jutland; and at the beginning of October in the same year, the fourth, being one of a pair which had haunted the sand-hills near Zandvoort, in Holland, since July, was shot at that place. I give these particulars after consulting the original records.

in the same year (1859), a pair of *Syrrhaptes paradoxus* are reported to have been killed in the Government of Wilna [*], on the western frontiers of the Russian empire.

It will be further recollected by my readers that, in May 1861, we were pleased to hear that this species had occurred abundantly during the previous winter on the plains between Pekin and Tientsin, and on the banks of the river Peiho downwards. As stated by Mr. Swinhoe in these pages ('Ibis,' 1861, pp. 341, 342), numbers were caught in clap-nets, and exposed, alive or dead, in the markets, so that the Anglo-French forces revelled on them as cheap luxuries. It seems that they made their appearance about the beginning of November [†] in large bands, and, I presume, the survivors of them stayed all the winter in the neighbourhood; but I can find no mention of their departure. Several of the gentlemen engaged on the expedition brought living examples to England. Mr. James Stuart-Wortley started with seventy-three, and handed over thirty-four of them to the Zoological Society. Captains Hand [‡] and Commerell brought some more (P. Z. S. 1861, pp. 196–198). Others were presented to the Queen by Captain Dyce, R.A.; and a few besides, I believe, passed into the possession of private persons. Of those deposited in the Zoological Society's Gardens, the majority lived a good many months. One bird has even laid several eggs, one of which I had the pleasure of exhibiting at the Society's Meeting on the 10th December following (P. Z. S. 1861, p. 397, pl. 39. fig. 1). A few, however, died, and Mr. W. K. Parker has been thereby enabled to make a careful examination of their osteology, the results of which examination, judging from the abstract of them which has already appeared (P. Z. S. 1862, pp. 253–260), we await with the highest interest. Other zoological gardens in Europe, also, have largely benefited by our fortunate acquisitions.

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[*] I owe the knowledge of this fact to Mr. J. H. Gurney, who kindly sent me a copy of the 'Kölnische Zeitung,' No. 339, for 7th December, 1863, which contains a report of a Meeting of the Silesian Society "für vaterländische Cultur." I shall have occasion hereafter to quote from this report, which, though containing some few misstatements, on the whole appears to be very credible. Professor Grube is said to have brought the subject of the irruption of *Syrrhaptes* before the Society.

[†] Mr. John Hancock has been good enough to let me see a letter addressed to him by Captain Carr, R.A., in which that gentleman says that the 10th November, being the day after he left Pekin for the south, was, he believes, the first day he saw them, and that on the 16th they were being sold in great numbers in the streets of Tientsin. This also agrees with, but is more precise than, Mr. James Stuart-Wortley's statement to Dr. Sclater (P. Z. S. 1861, p. 196).

[‡] Captain Hand identifies the *Loung-Kio* of Huc's Travels with *Syrrhaptes paradoxus*; and the Abbé's description, though, of course, extremely untechnical, is not so vague as to leave me any doubt on the subject, except that it might refer to the larger species, *S. tibetanus* of Gould.

Before coming to treat actually of the late irruption, I must quote from the important work, published in 1861, of Gustav Radde *, a traveller who, as before mentioned in this Journal ('Ibis,' 1859, p. 204, and 1862, p. 382), has had great opportunities of observing the habits of *Syrrhaptes paradoxus* towards the more eastern limits of its breeding-range, and who gives a much fuller account of its peculiarities than does M. Delanoue in the passage to which I have above referred.

Herr Radde passed the spring of 1856 in the basin of the Tarei-nor, a lake situated in Dauria, about 50° N. and 116° E. (from Greenwich). He remarks particularly on the favourableness of the district for migratory birds, among which *Syrrhaptes* is one of the earliest to appear, arriving (already paired, though keeping in flocks) on the 10th (22nd) March. Three days afterwards, when the winter's snow was yet lying on the hillocks of the high steppes, he describes it as still living in small societies (but always paired) on the adjacent salt-plains, from which it used to resort early in the morning to the fresh-water springs of the Tarei to drink. There these flocks would remain until about nine o'clock in the day, and then repair to the white salt-pans, among which are some slight elevations covered with grass. On these they scrape shallow pits, and sit therein, passing the rest of the day in quiet, some sleeping, while others walk about and pluck the young shoots of *Salicorniæ*, unless they are disturbed by a Falcon, when they instantly take wing, and, after several ringing flights, make off, alarming as they go their nearest comrades, who follow their example, until the air is filled with countless small flocks. But just as quickly as their quiet is disturbed, so is it again restored. They begin to descend, at first timidly, and then settle down on the elevations, keeping so still that, owing to the colour of their plumage, they are hardly remarked. On the 30th April (12th May) the first young are hatched, and by the 15th (27th) May the second brood of eggs were laid.

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* 'Berichte über Reisen in Süden von Ost-Sibirien.' St. Petersburg, 1861. The passages from which I quote are to be found between pages 373 and 417. The book is one altogether most interesting to a naturalist, and an English translation of it would be very desirable.

Herr Radde goes on to say that at the end of May (or, according to our reckoning, about the second week in June) he made an excursion to the island of the Tarei, passing over a high steppe, in the course of which he met with numerous bands of *Syrrhaptes*. There were two great flocks, each consisting of at least a thousand birds; but they were so shy, that neither on horseback nor by stalking could he approach them. After being many times disturbed, they betook themselves, flying with no small noise, to the bank of the Tarei, and eastwards over the high steppe, alighting on two places where herds of cattle had been folded in the winter, and consequently covered with a thick layer of dung, trodden so hard that no vegetation appeared through it. Here they settled themselves closely, and as night came on he left them, making sure of finding them next day. But in the morning they had vanished without leaving a trace, and throughout the whole course of the summer in that district he never again met with one bird. The herdsmen assured him they would return again; but in this he was disappointed, and it was only in October, in another locality, near Abagaitui, that he once more saw them. They were then flying in skeins (*Kettenzüge*), like Plovers, high and rapidly *towards the north*. Rightly enough may Herr Radde remark that "the peculiar build of this bird corresponds with singular habits, and that the characteristic '*paradoxus*' holds as well for the first as for the last." I may conclude this portion of my paper by saying that the Cossacks, who accompany the caravans to Pekin across the Gobi, told him that *Syrrhaptes* also inhabits those plains in great numbers, and serves them for game on their march; and that he obtained a complete series of specimens of this species, showing its development from the egg to the adult bird.

By the above passages from Radde's experience, it will be seen that *Syrrhaptes* is subject to sudden movements on a very large scale, and of a kind which, at first sight, appear almost capricious. Bearing this in mind, we shall be, I think, the better prepared for the consideration of last year's extraordinary irruption. I must only premise that it is not at all to be taken for granted, as I have commonly seen it done, that the immense flock which then or formerly visited Europe started from Dauria or the frontiers of China. On the contrary, a little reflection will show that it is of course far more probable that the birth-place of the European invaders was the western extremity of their ordinary range—the country immediately on the other side of the Caspian Sea, whence, as I have said, the species was first obtained and described. But this is quite far enough off to make such a Scythian exodus in these days sufficiently remarkable. Some 4000 geographical miles is a pretty long journey, even for a bird blessed with such powerful organs of aërial locomotion as *Syrrhaptes paradoxus*; and yet it is as certain as anything well can be that at least this distance was accomplished by several birds, and a distance not much less by very many birds, none of them, be it remembered, guided to a fixed goal by the traditional instinct of migration accumulated through long generations, but all urged by some not less forcible impulse, concerning which, for the present, we must suspend our judgment.

I have now to compile from the records, whether published or unpublished, that have reached me a catalogue of all the occurrences of *Syrrhaptes paradoxus* in Europe during the last twelve months. This list I shall arrange geographically, and therein it will differ from any I have yet seen. My main reason for doing so is that, unfortunately, many of these records are without precise date, and, therefore, it would be next to impossible in any other way to avoid a great deal of confusion. To the name of each locality I add its approximate longitude as calculated from Greenwich, and ascertained in every case, as far as possible, by reference to Keith Johnston's 'Royal Atlas of

Modern Geography' (Edinburgh and London, 1861). This plan not only affords a means of classifying the different occurrences, but also provides, as it were, a convenient index for finding out the places on the Sketch-Map (Plate VI.) accompanying this paper, and concerning which I must say a few words. I have spared no trouble in preparing it, and yet the result is not entirely satisfactory to me. This, I believe, is chiefly owing to the small scale on which it has been drawn; but of two evils I wished to choose the least, and I believe that a map which has to be unfolded when referred to is always looked upon as an incumbrance. On the other hand, I fully admit that the crowding of the names of places in some parts (the natural consequence of this small scale) is a very serious drawback, the more so that it often prevents the exact locality being accurately indicated. I have therefore to pray the kind indulgence of my readers for this last imperfection *. To keep the map as distinct as possible, the name of not a single place has been inserted at which a *Syrrhaptes* has not been recorded as observed either in 1863 or the present year. The general intelligence of my readers will, I am sure, supply the omission of rivers and mountains, as well as the names of countries, the insertion of which would only have complicated the map's general appearance, while it would have thrown no light on the course of the movement †. Here also I must express my thanks to the many friends who have assisted me in drawing up this paper, especially to those naturalists who have been so very kind as to forward me advance-sheets of their own articles on the subject, among whom I have to name the Editors of the 'Journal für Ornithologie," Mr. John Hancock, Professor Reinhardt, and M. de Selys-Longchamps. Nor are my obligations to the 'Field' newspaper and that useful magazine, the 'Zoologist,' to be overlooked. My readers will bear in mind that I am not writing a history of *Syrrhaptes paradoxus,* but only giving an account of its irruption into Europe last year. To this I strictly confine myself, and accordingly extract from the numerous records no details respecting the food, plumage, or habits of the species, valuable and interesting as such details are. Lastly, for the sake of brevity, I have in this list always omitted the "1863," which is to be understood after every date, and after every reference to a periodical (excepting the 'Zoologist'), unless the contrary is especially stated.

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* This defect will be most perceptible in the case of several of the localities in Cambridgeshire, which, in order to obtain the requisite space for writing their names clearly, have been of necessity placed on the *wrong side*, west, instead of east, of the meridian of Greenwich.

† I am sorry to say, the geographical knowledge of many naturalists is far from being what it ought to be. In reference to the present subject, I find numerous errors of this class, some of which are almost laughable. Borkum, for instance, is spoken of as in the Baltic; Sarepta is placed in the Crimea; but, worst of all, Jutland is made a "contrée de Groënland" !!

1. Brody, 25° 10′ E. No further particulars. Prof. Grube, 'Kölnische Zeitung,' No. 339, 7th Dec.

2. Willenberg, 20° 55′ E. One killed, out of more than twenty seen, "about four weeks ago." 'Magdeburger Zeitung,' 21st June; quoted by Dr. Carl Bolle, 'Journal für Ornithologie,' p. 247.

3. Pesth, 19° 4′ E. A flock, sometime in spring. Dr. Anton Fritsch, J. f. O. p. 296.

4. Stuhlweissenburg, 18° 25′ E. No further particulars. Prof. Grube, K. Z. No. 339. Perhaps another version of the last notice.

5. Gothland, 18° to 18° 30′ E. One specimen killed. Prof. Reinhardt, *in litt.,* 1st August.

6. Tuchel, 17° 50′ E. A male shot about 14th May. Dr. Carl Bolle, on authority of HH. Ludwig and Defert, J. f. O. p. 241.

7. Brieg, 17° 30′ E. A *young* bird, shot in August; exhibited by Prof. Grube to the 'Schlesische Gesellschafft für vaterländische Cultur,' K. Z. No. 339.

8. Miloslaw, 17° 30′ E. Two examples obtained through Herr Boncowski, 16th December, out of a flock of five. Some days after, another bird obtained. Lieut. Alex. v. Homeyer, J. f. O. 1864, p. 61.

9. Nykjöping, 17° E. Three shot, out of a small flock, in May. Mr. H. W. Wheelwright, in the 'Field,' 15th August.

10. Sokolnitz, 16° 40′ E. One killed, out of a flock of four, 6th May. 'Wiener Jagdzeitung,' No. 16; quoted by Dr. Quistorp, J. f. O. p. 392.

This appears to be the earliest date recorded with precision.

11. Vienna, 16° 23′ E. Examples killed in the spring, later than those at Pesth (No. 3). Dr. Anton Fritsch, J. f. O. p. 296.

12. Polkwitz, 16° 10′ E. Three knocked down by telegraph-wires, 17th May, out of a flock of about twenty-five. Dr. Carl Bolle, on authority of Lieut. Alex. v. Homeyer, J. f. O. p. 242.

13. Dobrzisch, 14° 10′ E. One killed in May. A flock of about sixteen remained some time in the neighbourhood. 'Leipziger Illustrirte Zeitung' of 6th June, quoted by Dr. Carl Bolle, J. f. O. p. 245; also Dr. Anton Fritsch, J. f. O. p. 296.

14. Jasmund, 13° 40′ E. A pair shot out of a large number, apparently at the end of September. Dr. Quistorp, J. f. O. pp. 392, 393.

15. Greifswald, 13° 30′ E. Two believed to have been killed. No further particulars. Herr von Preen, J. f. O. p. 394.

16. Wittow, 13° 20′ E. A pair killed about 29th September, out of a flock of fifteen. A flock of *from one hundred and fifty to two hundred* seen by Herr Fock, flying high from N.W. to S.E., 3rd October. Herr L. Holtz, J. f. O. 1864, p. 59.

17. Barth, 12° 40′ E. One caught alive, 17th October. On 19th and 21st one, and on the 23rd October two were seen. Herr L. Holtz, J. f. O. pp. 395–399.

18. Rimini, 12° 30′ E. One obtained in July, and now in the collection of Sign. Liverani at Imola. Dr. Thomas Salvadori, *in litt.*, 16th March, 1864.

19. Wöhlau, 12° 15′ E. A pair killed, with others, out of a flock of about thirty, 20th May. Dr. Carl Bolle, on authority of Herr Ludwig. Further particulars quoted, given by Herr Braune to Count Solm, J. f. O. p. 243.

20. Copenhagen, 12° 30′ E. One killed about twenty miles from this place. Prof. Reinhardt, *in litt.*, 1st August.

21. Belluno, 12° 15′ E. No further particulars. Prof. Grube, K. Z. No. 339.

22. Havellande, 12° 10′ E. One killed 4th June. Now in the Royal Museum at Berlin. Dr. Carl Bolle, on authority of Herr Ludwig, J. f. O. p. 245.

23. Harsleben, 11° 10′ E. One killed about 2nd June. Dr. Carl Bolle, on authority of Herr Haberkorn; received through Herr Ferdinand Heine, J. f. O. p. 246.

24. Halberstadt, 11° E. A flock of eighteen or twenty seen, 25th May, by Herr Ferdinand Heine, and his son Albrecht, the former of whom informed Dr. Carl Bolle of the fact, J. f. O. p. 245.

25. Laaland, 11° to 11° 50′ E. A pair killed 20th May. Pastor P. W. Theobald, *in litt.*, 27th May.

26. Wolterdingen, 9° 50′ E. One shot 24th May. Recorded as *Pterocles alchata.* 'Leipziger Illustrirte Zeitung,' quoted by Dr. Carl Bolle, J. f. O. p. 245. Probably the notice in the 'Field,' 6th June, respecting one shot near Hanover, refers to this occurrence.

27. Pinneberg, 9° 40′ E. A large flock seen, and some killed, about middle of September. Herr von Preen, J. f. O. p. 394.

28. Schlacht-Rossbach, 9° 20′ E. Some shot in May, out of a flock of about forty. Dr. Wilhelm Schilling, in the 'Magdeburger Zeitung,' pointed out the probability of the birds breeding in Thuringia, and also, in the 'Wiener Jagdzeitung,' No. 16, particularly recommended them to the protection of landowners, sportsmen, and naturalists. Editors J. f. O. p. 277; and Dr. Quistorp, J. f. O. p. 392.

29. Ribe, 8° 50′ E. Large flocks in the neighbourhood at the end of June and beginning of July. Prof. Reinhardt, *in litt.*, 1st August.

30. Novara, 8° 35′ E. A female shot about the middle of February 1864, and now in the Museum of the University of Turin. Professor de Filippi intends to publish some observations on it. Dr. Thomas Salvadori, *in litt.*, 16th March, 1864.

31. Sylt, 8° 20′ E. A flock of birds often seen there in summer, at first taken for Dotterel (*Eudromias morinellus*), but believed by Herr von Preen to have been *Syrrhaptes*. J. f. O. p. 394.

32, 33. Ringkjobing and Nymindegal, 8° 10′ E. On the sandhills (*Klitter*) between these places a large number of Pallas's Sand-Grouse have been observed during the past summer, as I am informed by my excellent friend Professor Reinhardt, who has most kindly favoured me with a copy in manuscript of the concluding portion of a paper on the subject read by him in the "Naturhistoriske Forening" of Copenhagen, and which will be published in their 'Videnskabelige Meddelelser*.' This communication enters so fully into details, that I am compelled here to give but a very concise abstract of it, though it contains matter far more interesting than I have met with elsewhere. Early in June last, Herr Bulow, an officer in the Custom-House at Ringkjobing, sent the Professor several living birds which had been snared by a gunner *on their nests* in the above-mentioned district, together with four of their eggs. One of the latter was found by Herr Bulow in the box which conveyed the birds, having been laid on the journey. It was colourless, indicating that it had been prematurely produced. The other three eggs were fully coloured. It appears that this gunner found two nests of *Syrrhaptes* in his own neighbourhood, and a third at a place called Bierregaard. On two of the nests both the birds (in each case the hens first and then the cocks) were caught, on the 6th June. These nests were near one another; and one, containing three eggs, consisted of a slight depression in the sand, lined with a little dry marram. The other had only two eggs, was placed among some ling, and furnished in a like manner. The third nest was similar to the first, and was halfway up a sand-hill. Of the three eggs sent to Herr Bulow, he found that two were quite fresh, but in the third the fœtus had begun to form, showing that they had been taken from different nests. Some more nests were found by other people, but unfortunately none of them were taken care of. The gunner, at Herr Bulow's request, made further search, but not until the 27th of July did he succeed in making any new discoveries. On that day he met with a flock of about a dozen birds, of which he shot two. He then went again to Bierregaard, where at last he put a bird off its nest among some stones in the sand, and containing three eggs. Next day he returned to it, and set a snare, in which, after two or three hours, the hen-bird was caught; and a few hours later, having reset the snare, he procured the cock in the same way. In the interval, he found, to his surprise, that one of the eggs had hatched. He took away with him the pair of old birds, the newly born chick, and the remaining two eggs, which, on getting home, he put in a box of wool by the fire, where a second egg was hatched. The third proved to be rotten. The chicks only lived one day, and it seems they were not preserved. On that same day (the 28th), while waiting about for these birds to be caught, he stumbled on another nest, from which he shot both the owners. I quite agree with Prof. Reinhardt that it follows incontestably from all this that *Syrrhaptes* is not polygamous, since both sexes share the duties of incubation, and that the full complement of eggs is three, as in the other *Pteroclidæ*, and not four, as formerly advanced by M. Delanoue, in the passage to which I before referred. The only questions, as the Professor remarks, on which doubts may exist are whether *Syrrhaptes* on this occasion was strictly "double-brooded," as it is stated by Herr Radde, in the extract I have given from his work, to be in Eastern Siberia, and whether the same birds may not even have bred in their own home before they started on their colonizing expedition. But, unless they hatch much earlier in the Kirgish Steppes than they do in Dauria,—the 12th May, according to Radde's observation (*op. cit.* p. 381), reduced to new style,—this last can hardly be the case, since, as I have shown, the horde had already reached the centre of Europe by the 6th of that month.

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* I had been in hopes to have given my readers a recapitulation of the whole of this valuable paper; but the invasion of Denmark by the Prussian and Austrian armies having interrupted the direct postal communication between that country and our own, my design has been frustrated. As it is, I consider myself most fortunate in having received so much information in time to use it on the present occasion.

34. Heligoland, 7° 55′ E. First observed and shot on the 21st May. Each successive day, up to the earlier part of June, seen in flocks varying from about three, five, fifteen, to fifty, and once or twice even to a hundred. Out of these nearly thirty were shot, the earlier birds being, with two exceptions, all males, the later nearly all females. On the 22nd June, six again made their appearance; of these five were shot—all females, and not in fresh plumage. Herr H. Gätke, 'Field,' 25th July, p. 101.

Herr Gätke infers from the above facts that "all through this abnormal and mysterious excursion of this species, they still adhered to the rules of birds on a regular spring migration—that is, the males forming the van, the finest specimens coming first, after which the females make their appearance, the rear being invariably brought up by weak, badly-developed, or injured individuals of a shabby appearance." I regret having to express my dissent from the opinion of a naturalist who is entitled to so much respect; but it is plain that the irruption of which I am writing is not a common case of "regular spring migration," wherein the birds may be said to have an instinctive knowledge whither they are travelling; and until it is explained to me by what means the individuals which on this occasion are said to have brought up the rear became acquainted with the course taken by the van, I cannot agree with Herr Gätke's inference. I believe that gentleman to be fully justified in his statement of what is the general rule in ordinary migrants; but every person who has indiscriminately collected birds must be aware how often, at certain times and places, one sex of a species largely predominates over the other; and I think it is safer to follow the example set me by Mr. Osbert Salvin in a similar case ('Ibis,' 1860, pp. 259, 260), and "not raise an hypothesis upon the facts that I have up till now collected." I must, however, remark that these facts, as may be gathered from the present paper, do not entirely agree with Herr Gätke's observations in Heligoland, as among the earliest recorded occurrences there is a very fair proportion of female birds.

35. Mandal, 7° 30′ E. Two killed near this place in the beginning of June. Mr. Percy Godman, *in litt.*, 21st August.

36. Lingen, 7° 20′ E. One killed against the telegraph-wires, 28th May. 'Neue Hannoversche Zeitung,' quoted by Dr. Carl Bolle, J. f. O. pp. 244, 255; and 'Magdeburger Zeitung' of 2nd June, *op. cit.* p. 246.

37. Norderney, 7° 10′ E. A large flock in autumn. Herr von Preen, J. f. O. p. 394.

38. Borkum, 6° 40′ E. Appeared on the 21st May in flocks of from fifteen to a hundred, but paired (*paarweise*). None seen from 23rd June to 1st July, when large flocks returned. In August, quite as if at home (*ganz wie zu Hause*). Dr. Altum, who records the above facts, saw them alive first on the 8th August. He examined thirty-eight examples which had been shot, ten of which were in the flesh. He gives some minute and valuable descriptions of the species, particularly as regards its pterylology and structure in comparison with other birds, as well as a detailed account of its habits, so as almost to justify the use of poisoned grain, which he seems to have tried in order to obtain specimens. From the 29th August to the 11th September, when he made a second visit to Borkum, the birds were yet in moult. A fine old cock which he shot on the 9th September was entirely new-feathered, though the attenuated quills had not yet grown to their full length. An old hen, shot the same day, had still some of the worn plumage remaining. "The summer and winter dress," he adds, "apart from the freshness of coloration in the latter, are altogether identical," J. f. O. pp. 248–260 and pp. 321–326.

39. Groningen, 6° 30′ E. No particulars. Heer J. P. van Wickevoort Crommelin, 'Nederlandsch Tijdschrift voor de Dierkunde,' p. 225.

40. Weert, 5° 45′ E. A male, shot out of a flock of six, 24th September. M. de Selys-Longchamps, 'Bullet. Acad. Belg.' 1864, pp. 24, 25.

41. Rocour, 5° 35′ E. A female netted, 12th October. M. de Selys-Longchamps, B. A. B. 1864, p. 24.

42. Pierre, 5° 20′ E. Five observed, but no further particulars

given. Dr. F. B. de Montessus, on authority of M. Rossignol, 'Revue de Zoologie,' p. 403.

43. Chalon-sur-Saône, 4° 50′ E. A male killed, 2nd June, in the neighbourhood, from a flock of eight, which was seen again on the 18th of the same month. Dr. F. B. de Montessus, R. Z. p. 358 and pp. 393–404.

In recording the occurrence of the bird last mentioned, M. de Montessus takes the opportunity of dwelling at some length on the history of the species, and his paper is illustrated by two plates representing both sexes, with enlarged figures of the head and foot. Unfortunately, not having had the advantage of seeing the 'Ibis,' he falls into several mistakes as regards previous occurrences of *Syrrhaptes* in Europe.

44. Velzen, 4° 37′ E. A female taken alive about the 9th June, and sent to the Gardens of the Zoological Society of Amsterdam. Heer J. P. van Wickevoort Crommelin, N. T. D. p. 222.

45. Zandvoort, 4° 32′ E. Numerous bands showed themselves, in the beginning of May, on the dunes here, which it will be remembered were frequented also by a pair of these birds in the summer of 1859, and where it is even asserted that in that year two eggs were discovered (N. T. D. p. 223). In 1863, Heer Crommelin states that these birds "vivaient ordinairement en petites familles de sia [*qu.* six ?] à quatorze individus, qui se réunissaient parfois en bandes de trente à cinquante sujets." He goes on to say, "Cependant, peu de temps après l'arrivée de ces gallinacés on fit lever une paire, qui se senait [*qu.* tenait ?] près d'un nid ou plutôt d'un creux dans le sable, où se trouvaient deux œufs : ceux-ci étaient de la grosseur de ceux de la tourterelle, mais un peu plus alongés et presque d'égale épaisseur aux deux bouts ; la couleur était d'un cendré clair un peu nuancé de roussâtre, avec des tôches [*qu.* taches ?] brunes peu distinctes. On plaça de suite des lacets afin d'attraper les oiseaux ; cependant on n'y réussit pas, puisqu'ils abandonnèrent les objets de leur plus tendre affection. * * Après la découverte de ces œufs dans les dunes des environs d'Harlem, on n'y a plus remarqué d'hétéroclite, qui semblait s'occuper des soins de la reproduction. Toutefois on prétend avoir trouvé dans

les mêmes dunes une seconde couvée, composée de deux œufs pareils aux premiers." (N. T. D. pp. 222, 223.) This very interesting notice gives us thus good reason to believe that Denmark was not the only country in Europe where this Sand-Grouse bred last year. The author of it also states that, on the 17th June, three females were obtained at Zandvoort, out of a flock of about forty. Two of these are now in his collection; the third, being only wounded, was sent to the Amsterdam Gardens, where, however, it only lived five days. A few days afterwards, another was found dead on the beach at the same place; and on the 5th September three males and two more females were killed there. On the 11th September, when he was writing, a few birds still continued to haunt the locality, a flock of fifteen keeping constantly on a field sown with buck-wheat, while a larger company of about thirty were leading a nomad life on the sand-hills. Heer Crommelin, in the course of his paper, which is of some length, dwells on the history of this curious species, and further remarks on the singularly dirty appearance presented by the specimens obtained some weeks after they had arrived in Europe, so different from that of the examples first killed. This appearance has been noticed by many English ornithologists who have had much experience of our visitors, and seems worthy of more attention than it has received; for I am not aware that it has been accounted for, though Heer Crommelin makes some suggestions on the subject. N. T. D. pp. 219–225.

46. Nordwijk, 4° 27′ E. One killed after 17th June, now in the Leyden Museum. Heer J. P. van Wickevoort Crommelin, N. T. D. p. 223.

47. Wassenaar, 4° 25′ E. A female killed 9th June, now in the Leyden Museum: it contained well-developed eggs. Another killed later, also in the same museum. Heer J. P. van Wickevoort Crommelin, N. T. D. pp. 222, 223.

48. St. Quentin, 3° 15′ E. ?* A female killed by M. de Tur-

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* I append a mark of doubt in this case, because I do not feel sure that I have quite rightly identified the locality mentioned. M. Marchand speaks

tigny, and received on the 6th October by M. A. Marchand, who records its occurrence. R. Z. p. 391.

49. Lille, 3° E. No particulars. M. Léon Olph-Galliard, on authority of M. E. Fairmaire, J. f. O. p. 390.

50. Ostend, 2° 50′ E. A male, "en apparence de l'année," killed 4th January 1864, by M. H. Serruys. M. de Selys-Longchamps, on authority of Professor Poelman, B. A. B. 1864, p. 25.

51. Bergues, 2° 25′ E. Several supposed to have been observed. The people in Picardy imagined that their appearance was due to the wreck of some ship which had them on board. M. A. Marchand, R. Z. p. 391.

52. Yarmouth*, 1° 35′ E. One female found dead on the beach, 23rd May. One male shot, 6th June, now in Mr. J. H. Gurney's collection. One female killed, 20th June, in Mr. Newcome's collection. A male and female sent thence, 8th July. Small parties observed throughout August and September. Mr. Stevenson, *locc. citt.*

53. Waxham, 1° 43′ E. One male and three females killed, 4th June, out of a flock of eight or nine birds. Two of these were presented to the Museum at Norwich. One male killed, 24th June. Mr. Stevenson, *locc. citt.*

54. Winterton, 1° 42′ E. One male killed, 17th June, out of a flock, which, since the 10th of that month, had been seen on

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of it as if situated in the Department of the Somme. After consulting several maps, I can find no such place within the limits of that department; but in the adjoining Department of the Aisne there is a very well-known town, named St. Quentin, and as that is built on the banks of the river Somme, I suppose it may be the locality intended.

* Mr. Stevenson having taken the trouble to sift out the particulars of Sand-Grouse which have been killed in the counties of Norfolk and Suffolk, and to compile therefrom three excellent papers which have appeared in the 'Zoologist' for the past year (Zool. pp. 8708–8718, 8849–8852, and p. 8957), I shall in this article follow the decisions which he has arrived at, instead of quoting the original authorities. Judging from the records, the number of birds (69 or 70) obtained in those two counties far exceeds the number obtained in any other district of Europe of like size.

Winterton Warren. On the 3rd August a small flock of twelve or thirteen seen on the beach there. Mr. Stevenson, *locc. citt.*

55. Kessingland, 1° 42′ E. One female killed, 24th June, out of a flock of twelve or fourteen which had frequented the neighbourhood for a fortnight previously. About the last week in July a flock of fifty or sixty strange birds, supposed to be of this species, were seen flying southward. Mr. Stevenson, *locc. citt.*

56. Horsey, 1° 41′ E. Eighteen birds, male and female, shot out of a flock of more than forty, 10th and 11th June. Mr. Stevenson, *locc. citt.*

57. Breydon, 1° 40′ E. A female shot, 8th June, in company with a flock of about nine Grey Plovers (*Squatarola helvetica*). Mr. Stevenson, *locc. citt.*

58. Crotoy and Somme, 1° 40′ E. Nine killed, apparently in September, on the dunes, seven of which were eaten. Mr. Leathes, *in litt.*[*], on authority of M. Morel, of Noyelles-sur-Mer, near St. Valery-sur-Somme.

59. Walberswick, 1° 39′ E. Two males and one female killed, 5th and 6th June. A flock of about eighteen seen there at the same time, as well as two smaller parties of seven and three. Mr. Stevenson, *locc. citt.*

60. Thorpe, 1° 38′ E. A female procured, 28th May. Four females and one male killed, 11th and 13th June. As many as fifteen or sixteen appear to have been seen in this locality up to the latter date. Mr. Stevenson, *locc. citt.*

61. Alderton, 1° 35′ E. One seen and shot at, 18th September. Mr. Stevenson, *locc. citt.*

62. Sizewell, 1° 34′ E. A male killed, 7th July. Mr. Stevenson, *locc. citt.*

63. Chartres, 1° 30′ E. One found in a pastry-cook's shop, 25th September, which had been killed seven or eight kilometres from the town. M. A. Marchand, R. Z. p. 391.

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[*] I am indebted to Mr. J. H. Gurney for this communication. M. Berthemieux (R. Z. p. 424) mentions, on M. Pucheran's authority, one killed in this locality in July.

64. Sherringham, 1° 15′ E. Four females, 26th June. Mr. Stevenson, *locc. citt.*

65. Morston, 58′ E. A flock of nine seen, which subsequently dwindled to three, of which one was shot about 22nd June. The last week in July a flock of thirty appeared in the neighbourhood, but vanished next day. Mr. Stevenson, *locc. citt.*

66. Mersea, 55′ E. One male and two females killed, 29th June (?). Dr. Bree*, 'Field,' 4th July.

67. Dungeness, 55′ E. One caught by a dog, near the lighthouse, at the beginning of August. Mr. G. Jell, *in litt.*, 7th October.

68. Lydd, 52′ E. One killed out of a flock of eight, 20th July; five more of them killed the following week. Mr. G. Jell, *in litt.*, 7th October.

69. Elmley, 45′ E. Four obtained out of a flock of six, of which two were killed, 7th June. Mr. E. Young, 'Zoologist,' p. 8721.

70. Croxton, 42′ E. A male killed about the second week in July. Mr. Stevenson, *locc. citt.*

71. Elveden, 41′ E. A very fine male brought alive to me, 6th June. It was found by a stable-lad who was exercising a horse in the morning. He saw it running in some long grass; and when he caught it, imagined it had been drenched by the very heavy rain we had had on the preceding night, and so rendered incapable of flight. There was a little blood on one of the wings, which I at first attributed to a self-inflicted injury as it beat itself about in the basket in which it was put; but, on in-

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* In the 'Field' of 1st August, 1863 (p. 157), my friend Dr. Bree, writing of the visitation of the Sand-Grouse, says, "Their destination was probably the Sahara, or the great sandy plains which skirt the Mediterranean on the south." It would be satisfactory to know by what means the birds became aware of the existence of these places, because it would greatly raise one's opinion of their general intelligence. He also adds that, "till last year [*i. e.* 1862] this bird was unknown in Europe," apparently forgetting that in a part of his recent work, published in that very year (B. Eur. iii. pp. 230, 231), he had mentioned the four best-known cases of its occurrence in Europe in 1859, which have been recorded in this Journal.

quiry, I found that a strange bird had been shot at, and hit, two days before, by a man close by, who, when interrogated, said he thought it had been a Golden Plover, though it seemed to him to fly somewhat like a Partridge; and that when the shot struck it, it "shruck" (shrieked) out like the former bird. I kept this example in a cage for a few days, feeding it on canary-seed, which it ate readily enough. It was extremely wild; but I succeeded in placing it so that I could observe its actions, unseen myself. I subsequently transferred it to the Gardens of the Zoological Society, where, in company with the hen bird from China, which has several times produced eggs, it is now living very contentedly. Mr. Bartlett, at my request, made a careful comparison of this and a living Chinese cock bird, and he informs me there was no difference whatever to be seen between them.

72. Wangford, 37′ E. About the same time as the last-mentioned bird was obtained, I am told that several were killed on the Warren at this place, and sent to London. Some of these, among a good many others, probably made their appearance on the shop-boards of the poulterers there. I may add, that I know of scarcely any place in England which I could conceive better fitted to become a home of this Sand-Grouse than the locality where these birds were killed.

73. Holme, 32′ E. Twelve birds, males and females, shot between 10th and 15th June. The bodies of two of these were sent to me for examination by my friend Mr. Thomas Southwell. A good many more seem to have been seen in the neighbourhood. A female was found dead on the beach, 1st July. Three males were killed, 3rd October, out of a party of four. Another male was shot the last week of November. Mr. Stevenson, *locc. citt.*

74. Methwold, 30′ E. Mr. Newcome informs me that a bird was killed in the fen-land here, out of a flock, sometime, he believes, in September. I have seen the specimen, which has been preserved by Mr. Leadbeater. Earlier in the year, several flocks of strange birds, thought by the observers to be Dotterel (*Eudromias morinellus*), were seen in the adjoining fens of the

southerly district, Feltwell and Hockwold. They were very likely Sand-Grouse; but as Dotterel do almost every year make their appearance in those parts, I have given them the benefit of the doubt.

75. Bexhill [*], 28′ E. A female killed against the telegraph-wires, 29th May. Mr. J. Dutton, 'Zoologist,' p. 8683.

76. Fordham, 22′ E. Several killed, the beginning or middle of June, as I learn from Mr. Baker, of Cambridge, who had them to skin.

77. Pevensey, 20′ E. A flock of eight seen, 28th May, from which probably the bird killed by the telegraph-wires at Bexhill (No. 75), the following day, was one. Mr. J. Dutton, 'Zoologist,' p. 8683.

78. Eastbourne, 15′ E. One killed, out of seven or eight. No particulars of date or precise locality. Mr. C. S. Willes, 'Field,' 13th June.

79. Saffron Walden, 15′ E. A male and female shot, 7th June. Mr. E. Taylor, 'Field,' 27th June.

80. Saltfleet, 12′ E. A male and female killed, and presented to the Scarborough Museum. No date mentioned. Mr. A. Roberts, 'Zool.' p. 8722; and Captain Woodall, *in litt.*, 3rd Sept.

81. Alford, 11′ E. Several, at the end of May or June. Mr. T. H. Allis, 'Zool.' p. 8724.

82. Swaffham Prior, 10′ E. One killed. No date. Mr. F. Bond, 'Zool.' p. 8722.

83. Leake, 8′ E. Male and female shot, out of a flock of thirteen, 25th May [†]. Mr. John Slight, *in litt.*, 12th Feb. 1864.

84. Cottenham, 7′ E. Four or five obtained, out of a flock of forty, end of June and July. Three caught alive, one of

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[*] Spelt "Box Hill" in the published notice; but as I find no place of that name near Pevensey, I conclude Bexhill is meant.

[†] These were erroneously recorded in the 'Field' as having been killed two years previously! Mr. Slight was good enough to give me the precise date.

which, a male, is still living in the possession of my friend Mr. F. Barlow, of Cambridge. Mr. J. Baker, Mr. F. Bond, and Mr. S. P. Saville*, 'Zool.' pp. 8722–8724.

85. Courteille, 5′ E. Five killed, out of a flock of sixteen, 21st June. Dr. de Montessus, on authority of M. Saillant, R. Z. p. 402.

86. Oakington, 4′ E. Male and female, end of June or July. Mr. F. Bond and Mr. S. P. Saville, 'Zool.' pp. 8722–8724.

87. Barrington, 1′ E. Several. Mr. F. Bond, 'Zool.' p. 8722.

88. Forest Gate, 0°. One killed. Preserved by Mr. Argent, and seen by Mr. Newman. No date recorded. Mr. J. Withers, 'Field,' 18th July; 'Zool.' p. 8684.

89. Louth, 0°. Several obtained in May or June. Mr. T. H. Allis, 'Zool.' p. 8724.

90. Boston, 1′ W. Some shot on the coast, a few miles north of this place. Anon., 'Field,' 13th June; Mr. C. G. Holland, 'Zool.' p. 8687.

91. Royston, 5′ W. Nine killed, said to have been all hen birds. Mr. S. P. Saville, 'Zool.' p. 8723.

92. Balcombe, 7′ W. One killed, as it appears, on 5th June. Mr. Frederick Russell †, in 'Sussex Express,' 13th June; quoted 'Field,' 20th June.

93. North Burton, 11′ W. One of a pair, the male, killed the first week in June. Mr. W. W. Boulton, 'Zool.' p. 8724.

94. Barnet, 12′ W. Two males killed, at South Mimms, near that place, before the 1st August, and preserved by Mr. Cooper. Mr. Newman, 'Zool.' p. 8685.

95. Bridlington, 13′ W. One killed in May or June. No further particulars. Mr. T. H. Allis, 'Zool.' p. 8724.

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* Mr. Saville was so obliging as to send me the sternum of one of these birds.

† This gentleman considers the extraordinary feet in this bird to be "a provision of nature to counteract the great heat of the hot sands"!

96. Peterborough, 15′ W. One or two killed in May or June. No other information. Mr. T. H. Allis, 'Zool.' p. 8724.

97. Skidby, 25′ W. One, weak and emaciated, caught alive, last week in July. Mr. W. W. Boulton, 'Zool.' p. 8769.

98. Flotmanby, 25′ W. Seven killed, out of a flock of nineteen, between 3rd and 10th June. Four were preserved, the remainder eaten; 'Times,' 19th June. Mr. E. Wright, 'Zool.' p. 8688, Mr. A. Roberts, 'Zool.' p. 8722, and Captain Woodall, *in litt.*, 3rd September.

99. Whitby, 35′ W. One killed in May or June. No further particulars. Mr. T. H. Allis, 'Zool.' p. 8724.

100. Aldershot, 45′ W. The female of a pair killed, 26th May; another female killed, out of a flock of nine, shortly afterwards. Mr. M. A. Mathews, 'Zool.' pp. 8683, 8684.

101. Unst, 55′ W. One shot, 4th November, at Halligarth, on this the most northern of the British Islands. The bird was first seen on 28th October, and others also appeared in the neighbourhood. Mr. H. L. Saxby, 'Zool.' p. 8888.

102. Dax, 1° W.* No particulars. M. Léon Olph-Galliard, on authority of M. E. Fairmaire, J. f. O. p. 390.

103. Farnsfield, 1° 2′ W. A pair killed, out of four birds seen, 2nd June, by Mr. T. Jackson, of Allamoor Farm. Auct. anon., 'Field,' 6th June.

104. York, 1° 5′ W. One killed in the neighbourhood, out of a party of four, before 22nd June. Five offered for sale to a game-dealer there, but the place where they were obtained not known to the reporter. Mr. E. Wright, 'Zool.' p. 8688, and Mr. T. H. Allis, 'Zool.' p. 8724.

105. Teesmouth, 1° 10′ W. A flock of sixteen or seventeen stayed some time in the salt-marshes in this neighbourhood.

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* I imagine that this occurrence may be the one alluded to by Dr. de Montessus as having taken place at a certain Solferino: the exact locality I cannot find on any map. The Doctor says, however, that it happened "une vingtaine de jours" before the 3rd June, which seems to me hardly likely (R. Z. p. 403).

Three said to have been shot on the 13th May*, and one several days later. All the specimens killed were males. Mr. Tristram, *in litt.*, 12th June, and 'Times,' 17th June.

106. Whitburn, 1° 20′ W. Two flocks seen to settle in standing corn, about middle of June. Mr. John Hancock†, 'Transactions of Tyneside Naturalists' Field-Club.'

107. Oléron, 1° 25′ W. Three killed in this island in October. M. Berthemieux, R. Z. pp. 423, 424.

108. Sheffield, 1° 28′ W. Four shot, out of a flock on the moors, at the end of May. Mr. C. Doncaster, 'Zool.' p. 8688.

109. Biscarolle, 1° 30′ W.?‡ One of three captured in a pine-nursery, 3rd June. Dr. de Montessus, R. Z. p. 402.

110. Farsley, 1° 32′ W. Two killed, out of a flock of fourteen, 10th June. Mr. W. Liversedge, 'Zool.' p. 8689; and Mr. W. Christy Horsfall, 'Zool.' p. 8722.

111. Cowpen, 1° 32′ W. A male shot, out of a flock of about twelve. In Mr. Hancock's possession. Two or three more killed in the neighbourhood, and in the possession of Mr. Snowdon at Alnwick. Mr. John Hancock, *ut suprà citatum.*

112. Thropton, 1° 34′ W. Two males and one female shot, at 3 o'clock A.M., 21st May, out of a flock of fourteen. Mr.

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* If there is no mistake here, these birds are the earliest obtained in England that year; but on tracing the course of flight across the continent of Europe, I feel sure that the date assigned is at least a week too soon. My energetic friend is far too well employed just now in the Holy Land to make me regret his absence, though I am thereby prevented from having the matter cleared up satisfactorily.

† Mr. Hancock has been at great pains to ascertain the exact particulars of all the occurrences of *Syrrhaptes* in Northumberland and Durham; I shall therefore in this case, as I did in that of Mr. Stevenson's compendium for Norfolk and Suffolk, abide implicitly by his determinations, to the exclusion of original authorities. Mr. Hancock most kindly forwarded me, as I before stated, his very valuable paper; but, as it was in manuscript, I am unable to cite the exact references to it.

‡ I am unable to identify this place with accuracy; but I believe it is close to Bayonne, and is consequently the most southern limit of the irruption recorded, as that town is in latitude 43° 29′ N. This occurrence is probably the one alluded to by M. Léon Olph-Galliard, J. f. O. p. 390.

John Hancock, *ut suprà citatum.* If there be, as I consider there is, an error in the information supplied to Mr. Tristram respecting the Teesmouth examples, these are the earliest recorded occurrences of the bird in England last year.

113. Ryton, 1° 37′ W. A female killed, out of a flock of about sixteen, 2nd June. Mr. John Hancock, *ut suprà citatum.*

114. Embleton, 1° 39′ W. A female found wounded, and seen in a game-dealer's shop at Newcastle-on-Tyne. About a fortnight later another individual was shot in the same locality. Mr. John Hancock, *ut suprà.*

115. Bamborough, 1° 43′ W. Two females and a male taken, about 5th October. Mr. John Hancock, *ut suprà.*

116. Ross Links, 1° 46′ W. A pair shot, about 24th June. Mr. John Hancock, *ut suprà.*

117. Belford, 1° 50′ W. Four females and one male, a few days before the 23rd August, and sold at Newcastle the week of the meeting of the British Association for the Advancement of Science. Mr. John Hancock, *ut suprà.*

118. Berwick-on-Tweed, 2° W. A pair shot, and sent, 26th September, to Newcastle. Mr. John Hancock, *ut suprà.*

119. Imber, 2° 5′ W. A female killed, 29th June. Mr. A. C. Smith, 'Zoöl.' p. 8888.

120. St. Jean-de-Mont, 2° 10′ W. Two killed, apparently on 21st November, out of a numerous flock. 'Petit Journal,' 1st December, quoting 'Phare de la Loire.' M. Guérin-Méneville, R. Z. p. 404, *note.*

121. Muchalls, 2° 12′ W. ?* Two killed, out of a flock of at least fifteen, 28th May. Sir William Jardine, on authority of Prof. Dickie, 'Edinburgh New Philosophical Magazine,' p. 167.

122. Eccleshall, 2° 15′ W. Two shot, out of a flock of about twenty, 22nd May. Mr. S. Yates, 'Times,' 28th May.

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* In Sir William Jardine's notice, the name of the locality is called "Munchals"; but as I can find no such place on any map that I have consulted, I presume it is a misprint for Muchalls.

123. Kilcot, 2° 20′ W. One found, "evidently starved to death," about the second week in January 1864. Mr. V. R. Perkins, 'Zool.' p. 8958.

124. Montrose, 2° 27′ W. Six, shot on the Links, about the first week in June. 'Edinburgh Evening Courant,' 13th June. Lieut.-Col. Drummond-Hay, *in litt.*, 15th June.

125. Warrington, 2° 35′ W. One shot, about four miles off, on the 28th November. Mr. James Cooper, 'Zool.' p. 8958.

126. Ludlow, 2° 43′ W. A flock of eighteen strange birds, supposed to be Partridges, but more probably of this species. Anon., 'Field,' 30th May.

127. Penrith, 2° 45′ W. One shot, in May or June. Mr. T. H. Allis, 'Zool.' p. 8724.

128. Noss, 3° 5′ W. A flock seen, between the 8th and 23rd June. Mr. H. Osborne, 'Times,' 26th June.

129. Oswestry, 3° 5′ W. Two killed, from a flock of nearly one hundred; preserved by Messrs. Buffon and Wilson. 'Field,' 13th June.

130. Gordon Castle, 3° 6′ W. One shot by the Duke of Richmond, out of a flock of seven or eight, 16th October. Mr. Knox, on the Duke's authority, *in litt.*, 23rd October.

131. Westerseat, 3° 10′ W. A male shot, out of a flock of ten or twelve, 8th June; now in Dr. Sinclair's collection. Mr. H. Osborne, 'Times,' 26th June.

132. Leasowe, 3° 10′ W. A male shot, early in November. Mr. T. J. Moore, 'Zool.' p. 8889.

A male previously shot in the same district, at Hoylake. Mr. T. J. Moore, 'Intellectual Observer,' October, p. 200. Erroneously recorded by the same gentleman in 'Times,' 6th June, as having been killed near Perth.

133. Walney, 3° 15′ W. A pair shot, 22nd May, out of a flock of about fourteen. Mr. E. J. Schollick, 'Times,' 26th May.

This was the first published notice, I believe, of the arrival of *Syrrhaptes* in England.

134. Lossiemouth, 3° 20′ W. A male struck down by a Hawk, and preserved for the Elgin Museum. No date. 'Banffshire Journal,' quoted 'Zool.' p. 8959.

135. Slapton, 3° 38′ W. A pair shot, out of a flock of thirteen, apparently about the end of June. Mr. H. Nicholls, 'Field,' 18th July.

136. Brora, 3° 50′ W. A flock of seven birds, at the time taken to be Golden Plover by the observer, who was, however, afterwards convinced that they were *Syrrhaptes*, 1st June. Mr. T. Mackenzie, 'Zool.' p. 8959.

137. Stirling, 4° W. No particulars. Mr. F. O. Morris, on authority of Mr. A. Johnstone, 'Times,' 13th July.

138. Dornoch, 4° 5′ W. A male bird shot, 5th or 6th June. Mr. W. A. M'Leay, 'Field,' 13th June; and Mr. T. Mackenzie, 'Zool.' p. 8959.

139. Heanton, 4° 10′ W. A female shot, 11th December. Mr. J. L. Langdon and Mr. M. A. Mathews, 'Zool.' p. 8958.

140. Renfrewshire, 4° 15′ to 4° 50′ W. One caught alive "seven or eight weeks ago;" in possession of Mr. Small. Exact locality not stated. Auct. anon., 'Field,' 1st August.

141. Haverfordwest, 4° 59′ W. A female shot, 8th February, 1864, and seen by Mr. Gould in the flesh. Mr. H. Ward, *in litt.*, 8th March, 1864.

142. Land's End, 5° 41′ W. A female shot, about the second week in June. Mr. Rodd, 'Zool.' p. 8682.

143. Balbriggan, 6° 15′ W. Legs and wing-feathers of a bird found, as it would seem, at this place. Mr. R. P. Williams, 'Proceedings of the Natural History Society of Dublin,' 4th December; reported in 'Saunders's Newsletter,' 15th December.

144. St. Agnes, 6° 20′ W. A male picked up dead, 23rd June. Mr. Rodd, 'Zool.' p. 8682.

145. Thorshavn, 7° W. One found dead in the sea, at the end of May. Two males killed in June; two more, perhaps a pair, observed at the same time, but not shot. These stayed on

the island as late as September. The most northern locality ever recorded, as far as I know, for the occurrence of the species. Professor Reinhardt, on authority of Herr Müller, *in litt.*, 5th February, 1864.

146. Ross, 7° 46′ W (*circa*). One of two shot, 8th June. Lord Clermont, 'Zool.' p. 8934.

147. Drumbeg, 6° 55′ to 8° 40′ W. ?* A male bird shot, apparently 17th June; and a female captured alive the following day, out of a flock of thirteen or fourteen previously observed. Mr. Sinclair, 'Field,' 20th and 27th June.

148. Naran, 8° 26′ W.† A pair shot "lately." Mr. M. B. Cox, 'Field,' 18th July. This is the most western locality for the species recorded with precision.

Thus much for the recorded facts of the irruption. A brief recapitulation of the most remarkable points only is necessary. I have been able to trace the course of the invading host through more than thirty-three degrees of longitude, from Brody in Gallicia (No. 1) to Naran on the west coast of Donegal (No. 148); and it will be seen that towards the western limits of Europe it extended over some five-and-twenty degrees of latitude, from Biscarolle in Gascony (No. 109) to Thorshavn in the Færoes (No. 145). Unfortunately I am at present ignorant of the exact time of its first appearance in the most eastern localities. The earliest date given with precision is the 6th May, at Sokolnitz in Moravia (No. 10). A week later (the 14th May), the right flank of the advancing army had reached Tuchel in West Prussia (No. 6); on the 17th its centre was observed at Polkwitz in Silesia (No. 12). On the 20th May birds occurred at Wöhlau, in Anhalt (No. 19), and on the Danish island of Laaland (No. 25). The following day (the 21st) they had not only overrun the British dependency of Heligoland (No. 34), but had even established themselves on the shores of England, at Thropton in Northumberland (No. 112). The next day they had penetrated to Eccleshall, in Staffordshire (No. 122), and crossed the country to Walney, on the coast of Lancashire (133). By the end of the month they had arrived at the Færoes (No. 145). These dates, as indications of the continuous advance made by the invaders, I have thought it advisable to have inserted on the accompanying map (Plate VI.), which, however, it has seemed to me inexpedient to encumber with further chronological details; because it is pretty plain that, having with so small a loss of time reached meridians so far to the west, it became almost purely a matter of accident when they were recognized in any more eastern locality. Besides, too, these dates, few as they be, I think, are quite sufficient for another purpose. They serve to show the nearly equable rate of the invaders' progress. There is certainly a considerable break between the recorded observations of the 6th and the 14th of May (Nos. 10 and 6), and it would be very desirable could the movements of the birds during the interim be satisfactorily accounted for. But, with this exception, the Tartar horde seems to have swept uninterruptedly onwards in an almost uniformly north-western direction, small bands detaching themselves from the main body at intervals, and these again often separating into pairs throughout the entire transit. Once arrived at the borders of the ocean, if one may judge from the evidence before us, many were driven back. Then they seem to have spread themselves over the surrounding countries, where some of them have almost ever since been occurring sporadically, seeking out, as was natural, districts most agreeable to their habits. Thus I would partly account for the preference shown to the east coast of England, which the map renders very plain; but I would remark that too much dependence ought not to be placed on this supposed cause, for along the whole shore, from Pevensey Bay to Berwick Bounds, the prevalence of gunners, who make their living all the year round by shooting wild-fowl, and whose attention was immediately excited by these strangers, must also be taken into consideration.

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* I must apologize for a mistake on my map with reference to this locality. The name is there spelled 'Drugoobe,' instead of 'Drumbeg'; but this place is not marked on any map that I have had access to. A living male bird, said to have been obtained in the same county, was presented to the Zoological Society by Lord Francis Conyngham, 11th December.

† In the notice, the name of the locality is spelled "Nairn"; but I have little doubt Naran is the place meant.

When Mr. Gould, last August, wrote the account of this species for his magnificent work, now publishing ('The Birds of Great Britain'), comparatively few of the facts of the irruption of 1863, which I have here collated, had been published. It might, therefore, have been fairly open for him (though such was never my own opinion) to state of *Syrrhaptes* that it "has arrived in numbers at a time, and for several years in succession. Since its first appearance in 1859, it has been steadily arriving, either in pairs, little companies of from eight to ten in number, or in packs of from fifty to a hundred" ('Birds of Great Britain,' pt. iv.). Now, as I have said above, all the assertions I have seen with respect to its occurrence in England, or even in Europe, between 1859 and 1863, have their origin in careless mistakes; and the summary I have attempted in the preceding paragraph, to my mind, proves that the irruption of 1863 was, if one may so say, one single act. To suppose that the several hundreds of *Syrrhaptes* which last year occurred in Central or Western Europe came flocking in intermittently and by dribblets necessitates the belief (as I before pointed out in controverting Herr Gätke's views) that the later comers knew in some mysterious manner the route their predecessors had taken; and this presumption, I am fully satisfied, is not warranted by any of the details as now unfolded to us, but, on the other hand, is manifestly opposed to what seems to me the simplest idea of the whole case, namely, to regard the movement as the passage of a single large band, such as one of those, a thousand or more in number, which were seen by Radde in Dauria, and described by him in the extract I quoted from his work *.

I rather doubt if the main body ever reached England. Nearly one hundred is the largest flock recorded as having been observed in this island at one place, namely Oswestry (No. 129). The bulk of the invaders seem to have been checked in their onward course by the North Sea, and to have passed the summer on the flat and sandy coast extending from Holland to Jutland, both of which countries witnessed, as I have related, attempts on the part of the colonizers to increase and multiply. In Holland we have flocks of a couple of hundred spoken of as frequenting the sand-hills in June (J. f. O. 1864, p. 69). At the beginning of July, Professor Reinhardt informs me there were large flocks in Jutland and Slesvig (No. 29). About the middle of August, Dr. Altum tells us that bands of from ninety to one hundred were still seen on the Frisian island of Borkum (No. 38). A month later, in September, a great flock was observed at Pinneberg in Holstein (No. 27), and some time in autumn a large flight on Norderney (No. 37); while the latest notice I can find of a numerous company being seen together is on the 3rd of October, when a flock of from one hundred and fifty to two hundred were seen at Wittow in Rügen (No. 16), flying high in air from north-west to south-east, and making probably for the land of their birth.

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* The curious circumstance of the absence of these birds from Heligoland for at least a fortnight in the earlier part of June, which partly helped to mislead my worthy correspondent, I think rather points to the conclusion I have formed. In that little island, under the keen eyes of its watchful ornithologist, they could not possibly have escaped observation. I therefore regard their absence as an established fact, and would explain it on the hypothesis which I have before laid down, that the examples seen subsequently to the 22nd of June had returned thither after vainly attempting to find suitable resting-places further west. The case was similar in Borkum.

With regard to the actual numbers of the invading host, it is not very easy to come to any definite conclusion. I compute those which we know to have been obtained during the past twelve months at not far from 345, of which 35 may have been killed since the beginning of last October. I think we may also safely allow another 155 for birds which, falling into the hands of ignorant persons, have been altogether lost sight of*. We have thus about 465 to add to the 150 or

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* This, of course, is only guess-work; but I believe it is an almost received opinion among British naturalists that for each foreign bird killed in England, and coming to the knowledge of ornithologists, at least another escapes their notice altogether. Not to overstate my case here, I have assumed that we become acquainted with two instances only out of every three. In Scotland, Ireland, and most parts of the Continent, the proportion of recorded to unrecorded occurrences must be still less. The fate of most of the examples of *Syrrhaptes* obtained in France, Germany, and England is rather curiously significant. In the first-named country the majority are stated to have been eaten (R. Z. p. 391); in the second they were preserved as specimens and deposited in public museums; while here they were also preserved, but generally retained in private hands.

200 which were observed in Rügen (No. 16) on the 3rd of October, most likely on their return journey. But as I do not suppose that all the surviving visitors could have then collected together, we ought perhaps to allow some 50 more for those which were at that time scattered over Europe, even as far as Italy and the frontiers almost of Spain, many of which (say 35) have since been killed. This would bring the strength of the invading force at the first instance up to 665 or 715. It may be that in reality many more started: it would not surprise me to learn that some had tarried on the steppes of the Ukraine, or other places nearer their own home. And then, again, much larger flocks than those whose numbers are actually specified may have been seen in Western Europe, in Denmark, in Germany, and Holland; but the statements are too vague to be of much use to us. A man who looked upon *Syrrhaptes paradoxus* as a very rare bird might consider himself justified in calling a party of a score or so a large flock. Any how, from the information we have, I do not think we can set down the number at less than 700.

It has been represented to me by a naturalist for whose opinion I have a very great respect, that all the birds, even the first obtained, were in full moult, and therefore that it was highly improbable that any of them should remain to breed with us. I have already thrown out the suggestion that it is possible that some of them had already bred in their own country, before they commenced their journey. But, setting aside the undoubted facts, so circumstantially detailed, that a few of them did actually breed in Jutland and in Holland, and also that still later, in autumn and winter, young birds of the preceding season, which were in all probability bred in Europe, have been recognized, as at Brieg (No. 7) and Ostend (No. 50), I would remind my readers that in the somewhat allied family, the *Tetraonidæ*, certain of the species are always on the moult from March to November, and therefore it is not unlikely that the same habit may obtain in the *Pteroclidæ**. From the accounts which I have received from many persons well qualified to judge, as also from my own experience of the specimens I dissected, I am sure that most of the examples killed in May and June, both males and females, were in a condition to breed very shortly. The birds obtained later in the year, so far as I have observed, had successfully progressed in or had accomplished their moulting; and this is an additional testimony in favour of their well-doing in Europe. The beauty of the autumnal specimens, in their new apparel, far surpassed that of the earlier ones.

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* I see no occasion to follow Nitzsch's example (Pterylographie, p. 162) and make a distinct family of *Syrrhaptidæ*.

And now to indulge myself in a few speculations on what may have brought about this irruption of which I have just given some of the details. I have conversed and corresponded with many of my ornithological brethren on the subject, and I have heard many ingenious suggestions respecting it, but, I must say, without meeting with a satisfactory solution of the difficulty. I commenced by observing, that in the records of ornithology it is an unparalleled event; the nearest approach to it, that I am aware of, is the extraordinary visitation of *Ampelis garrulus* to the valley of the Muonio River, in 1858, which I before mentioned in this journal (Ibis, 1861, p. 100). Yet that fell far short of this irruption, inasmuch as the distance traversed by the wanderers was probably very much less. The influx of the same bird, the Waxwing, into England in the winter of 1849–50, and the great band of *Nucifraga caryocatactes* which, in the autumn of 1844, pervaded Western and Central Europe, important though they be, are events which were, probably, simply the results of the ordinary migratory impulse turned in a new direction, and in their effects not comparable to the movement of which I have here endeavoured to compile an account; for in neither case was the migration attended with a real increase of the breeding-range of the species. In the first place it is only right that I should place before my readers some of the various reasons which have been suggested to account for the present occurrence. Dr. de Montessus considers that the *Syrrhaptes* was driven from its proper home "par quelque commotion atmosphérique" (Rev. Zool. 1863, p. 393), and that, without doubt, some "révolution extraordinaire dans la nature bouleversée de sa patrie a déterminé une perturbation terrible dans l'essence de ce petit être" (*op. cit.* p. 394); but I confess myself at a loss to imagine of what nature this atmospherical commotion or this extraordinary revolution might be. He seems to think that the continuance of a week's violent north-east wind, which preceded the date (June 3rd) when his first example occurred, may have been sufficient to account for Now that such a wind may have deflected the course of our invaders I am not prepared to deny; but then we know that examples of this bird had been met with in Europe nearly three weeks before this wind began to blow. I cannot therefore agree to the suggestion*. Another cause has been imagined by Dr. Darracq, who conceives that the birds "pourraient fort bien avoir opéré leur migration dans le cours de l'automne dernier (1862), et leur retour se serait effectué beaucoup plus tard que chez les autres espèces. S'il en était ainsi, il faudrait admettre qu'ils eussent suivi une route inaccoutumée" (Rev. Zool. 1863, p. 401). But this, I would submit, does not touch the question. I am more ready to coincide with an expression that follows:—"Toutefois, convenons que l'instinct d'émigration de la race ailée est tel, qu'il peut déjouer toutes nos théories, mettre à la torture l'esprit scrutateur le mieux exercé et lui causer plus d'une déception."

In the letter which Mr. Hancock was good enough to place in my hands, and which I have before mentioned, Captain Carr states of these birds, "I think that their appearance in England during the last year or two may be partly accounted for by the colonization of the valley of the Amoor by the Russians, and the probably increased amount of land sown with seed along the roads leading from thence to European Russia. My idea is that some birds, instead of seeking food in the country around Pekin, have gone westward, supplying themselves with food from cultivated lands which a few years ago were in a state of nature—perhaps a desert." But I have said above that we ought not to assume that our visitors came from a region so remote as Eastern Siberia; I therefore must decline to acknowledge this as the true cause of the irruption.

Dr. Altum, in the second of his valuable articles on the occurrence of *Syrrhaptes* in Borkum, endeavours to account for its appearance as follows:—"I, for my part, think of the drought in Hungary, so forcibly represented to us in the newspapers this summer, and conceive that a like condition of weather may have laid all the freshwater lakes in their home quite dry, and scorched up all vegetation, which may have caused the business of breeding, already begun, to be given over, and the old birds this year to become the nomads of other times" (Journ. f. Orn. 1863, p. 326). That such a reason might suffice I fully admit; but is it a recognized fact that a drought so severe as to induce the effect we have to meet has really occurred from Hungary to the further shores of the Caspian? and if it has, would it not bring about the expatriation of almost every other kind of bird? for I look upon it that *Syrrhaptes* can and does maintain itself where most species would starve. Yet, as Mr. T. J. Moore has well remarked (Intellectual Observer, Oct. 1863, p. 205), with regard to the year of their former apparition (1859), that it produced no other unusual Eastern birds*, and I think the same (with the exception of *Anthropoides virgo*) may be said of the past summer, while, on the other hand, if Dr. Altum's suggestion be the right one, surely we should have had many other natives of Tartary turning up.

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* I am bound to say, however, that it meets with the approval of no less high an authority than Professor Gratiolet (R. Z. 1863, p. 460).

Shall we then be far wrong in considering the proximate cause of this wonderful movement to be the natural overflow of the population of *Syrrhaptes*, resulting from its ordinary increase? It must be borne in mind that it cannot have many enemies in its own haunts. Radde, as I have mentioned, shows how nimbly it escapes from the attacks of Falcons; indeed the effects which most raptorial birds produce upon it as a species must be beneficial in maintaining a vigorous race, for any member of the flock assailed that is not in the highest condition will assuredly fall a prey to the pursuer, and thus only the healthiest individuals will live to propagate their kind. It is almost impossible that there can be enough Falcons to materially thin the ranks of, and keep down the numbers of, a bird so swift and enduring in its flight as we know *Syrrhaptes* is. The time necessary for incubation and the growth of the young we also know, from Radde's observations, to be short in comparison with what it is in most ground-breeding birds. *Syrrhaptes* is therefore exempt from much risk which attends them. Again, regard those acuminated primaries, those filiform tail-feathers, those syndactylous feet, such as exist in no other bird. Do not they indicate a highly specialized organization? Grant that the Sand-Grouse are, as a family, of inferior development. Does not *Syrrhaptes* show, to borrow an expression from that pregnant paper of Mr. Parker's (P. Z. S. 1862, p. 258), "the culmination of the Pterocline type of structure"? Surely even those who refuse credit to the asserted validity of "natural selection" when urged to its utmost limits, must admit that this bird is probably the conquering hero of a long "struggle for existence." Under this conjecture it may be literally "seeking pastures new." It may have been striving to extend its range in all directions; if so, assuredly it will have found the direction of least resistance. Northwards climatic causes would probably hinder its expansion; eastwards the country is already stocked by its own race nearly as far as the Pacific; southwards it would trench on the district occupied by its big brother, *S. tibetanus*; westwards therefore it must turn. It got its foot in Europe as long ago as 1853, it may be longer; we must allow for the imperfection of our record. In 1859 it comes again, the stress being now, with time, severer: possibly more birds start, and the birds that start reach a greater distance. In 1863, from the same increasing pressure from within, still more come, and come still further. If this notion be correct, unless some physical change occurs in the Tartar steppes, which may have the effect of relieving the pressure, another outpouring may be safely predicted, and probably the already thrice-found channel will be again used by the emigrating population. Let us look then to the naturalists of Russia, on whom the mantle of Pallas so worthily rests, to enlighten us still further as to the history of the bird which we strive to associate with his memory.

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* Mr. Moore does, indeed, cite one instance of the occurrence in England that autumn of *Otis tetrax*; but when one considers that that is a species which is very abundant in many parts of Europe, certain districts in France among the rest, the probability is strongly against this example being of oriental origin. It is, besides, a bird which occurs nearly every year in this country.

Before quitting the subject, there is one point on which I must say a few words, which will be, I hope, not thought out of place. Hitherto, throughout this paper, I have contented myself with merely recording the facts of this wonderful irruption. I have now to declare, as strongly as I am able, the feeling of utter disgust with which I have all along regarded the brutal and unnecessary slaughter of these harmless immigrants. In this feeling I am sure all true lovers of ornithology share. It has made the collecting and arranging of materials for this account, which, though a laborious, would have been otherwise a congenial task, from beginning to end irksome to me. I rejoice to say that not one single naturalist, who has favoured me with any communication on the subject, has ever, even in the expression of opinions intended only for my private use, and which may therefore have been unguarded, given me reason to think that he approved the cruel massacre which has been perpetrated, while many have in the most forcible terms condemned it. In published notices, so far as I know, only one person, whose boldness excites my wonder, has attempted to palliate it, and he, forsooth, writing of these birds, though desirous, he says, "to make them available for scientific purposes," has neglected to chronicle the exact date and locality of the slaughter he committed, thereby cutting himself off from the only excuse that would justify his acts. Perhaps he has made what atonement he could, and deposited the remains of his victims in some public museum. But so far from this having been the prevailing practice in this country among other Syrrhapticides, I know that but a short time ago not a single British-killed example of the species had found its way into the national collections of England, Ireland, or Scotland. What would have been the consequence had our recent visitors been allowed to remain unmolested, the information I have quoted from Denmark and Holland leaves no room for doubt. That much which is written in newspapers on "bird-murder" is arrant nonsense no naturalist will deny*. The editors of those journals cannot be expected to have that special knowledge which alone would enable them to detect the fallacies of which many of their correspondents, well-meaning though they be, are guilty. And if such a man has the ear of an influential journal, and gets his remonstrance inserted in its columns, however inconclusive the arguments he brings forward may be, it only serves to exclude any further and, perhaps, better-reasoned communication on the topic. But I have especially to lament, as Mr. Gould, in his 'Birds of Great Britain,' has done before me, that the Acclimatization Society established among us did not use its influence to restrain the destruction of the Sand-Grouse. Volunteers for naturalization as they were, they had a peculiar claim on its sympathies. Yet, instead of taking any step in that direction, this body confined itself to discussing at its annual dinner the merits of the species as an article of food—merits on which a score at least of the officers engaged in the late Chinese war were already able to pronounce. Had the Society exerted itself in the manner that might have been expected of it, my map would probably not have presented the dismal array of names which fringes the eastern shore of our island, and my readers would have been spared much pain in conning over the blood-stained roll which records the second irruption of *Syrrhaptes paradoxus* into England.

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* In November last a paragraph went the round of the papers, headed "Stupid Slaughter," "More shame to him," and with other similar titles,

Magdalene College, Cambridge, March 1864.

XVII.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters addressed "*To the Editor*":—

5 Peel Terrace, Brighton, November 24, 1863.

Sir,—On the 19th September, as a man was watching his nets, near "the Dyke," the highest ground on these downs, a

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mentioning that a gentleman had shot an example of *Syrrhaptes* in the beginning of that month. Now, considering the season of the year, the death of that one bird could have no appreciable effect on the species at large; I therefore consider blame in this case to have been somewhat unnecessarily applied, the more so since the person in question showed that he turned the specimen to good account by the intelligent notice he published respecting it. Had the like sarcastic remarks been made some months earlier, good might have followed. These were much too late.

party of six Knots (*Tringa canutus*) came across, and all were secured at the same pull. If we take four as the supposed number of eggs laid by this bird, we have here the whole family, which had, most likely, that very day arrived from their breeding-ground in some unknown land, concerning the situation of which I wish they could tell us. What took them into the net I cannot make out: I have known many birds do the same, without any apparent object. A Hobby (*Falco subbuteo*), now alive in my possession, was thus caught: the "reason why" *he* went there we understand; but what takes Knots and Crossbills, &c., in? The only motive I can assign is curiosity—fatal to many besides the tribe of Aves. It is very strong, we are aware, in some species. I have seen a good deal of rearing birds from the nest, and am often astonished to observe with what different dispositions and characters they are hatched, which variations they preserve through life. I find in the same brood the greedy, the quarrelsome, the timid, and the mischievous. Of some Lesser Black-backed Gulls (*Larus fuscus*) kept in my garden, the prevailing characteristic of Mr. Jack is mischief; and his tricks, if related, would fill a small book—too much, therefore, for the patience of your readers: Bob, one of his companions, on the contrary, is the most quiet, unobtrusive creature possible—presenting the most marked difference. But to return to our Knots: a male and female of these were put into Swaysland's aviary, where I saw them. Certainly, if Sterne had applied to them in the place of the Starling, we should have lost a very pretty bit of sentiment; for instead of "We can't get out," it was nothing but "We are ready to stop in," and this at once apparently regardless of everybody. I never saw anything like their tameness and affection towards each other.

Two Fire-crested Wrens (*Regulus ignicapillus*) were obtained by Mr. Swaysland, in his garden, October 15, three being observed, all in company with Cole-Tits (*Parus ater*). One of the latter only was seen to enter the net; on going up, however, a *Regulus ignicapillus* was also found; another flew in, a few minutes after; a third escaped. Comparing these with about a dozen specimens of the common sort (*Regulus cristatus*), I was surprised to find that the epithet "fire-crested" would apply with much greater force and propriety to many of them. But, in addition to the black bands on the cheeks, there is a beautiful broad blush of orange-red round the neck of the rarer *Regulus*, which is absent in *Regulus cristatus*. I dislike changes of name; yet "Fire-crested" appears to convey a wrong impression. Young naturalists fall in with a bright-crested male of one kind, and fancy that it is the other. I find, in my notes, the capture of a *Regulus ignicapillus* on the Dyke-road, near Brighton, recorded, 29th October 1853; and Mr. Swaysland tells me of a fourth instance many years before. These are all the cases of its occurrence that I can give in these parts.

A Crested Lark (*Alauda cristata*) was also brought in by a bird-catcher, from near Shoreham, alive, 20th October, as I saw the same day. If Mr. Morris's Sussex example counts as the second (though no particulars have been given), this would be the third time of its appearance in this country. I have reason to believe there have been more passing over this autumn.

Lastly, a Sea Eagle (*Haliaëtus albicilla*) was shot on the beach near New Shoreham, 12th November. It had been sailing in the air over the church, and is said to have weighed 10¼ lbs. This is a quarter of a pound more than the bird killed, February 1858, at Arundel.

One of these Eagles appears to visit this neighbourhood every two or three years, as I have a memorandum of the death of another from an ornithological friend, 23rd February 1860, who states that it met its end not far from the Lighthouse, Seaford, a few days before. Their destruction I mention with regret.

I am, Sir,
Yours, &c.,
GEORGE DAWSON ROWLEY.

Lyon, le 29 Novembre, 1863.

MONSIEUR,—Plusieurs ornithologistes se sont élevés contre la tendance de quelques auteurs à multiplier le nombre des espèces, et cherchent au contraire à le diminuer autant que possible. D'autres, voulant éviter ces deux excès, y tombent quelquefois sans le vouloir. Les nombreux mémoires qui ont été publiés,

il y a peu d'années, sur la question de l'espèce, n'ont pas complètement rémédié à cet état de choses. Car, sur ce point, il est plus facile d'établir des théories que d'en faire l'application, et l'on peut dire sans trop se hasarder, que les naturalistes ne seront jamais d'accord sur le nombre d'espèces dont se compose la faune d'une localité. Toutefois, loin d'embrouiller la science, n'est-il pas plus profitable de décrire comme espèces toutes les races ou variétés locales, pourvu qu'elles présentent des caractères appréciables et constantes? Peu importe que la *Pica mauritanica* soit ou non une race de la *Pica caudata* d'Europe. Que fera-t-on de la *Pica leuconota* de Brehm, qui a été observée en Suède et en Norvége par M. Meves (Öfvers. af K. Vet. Ak. Förhandl. 1860, p. 192), et que j'ai trouvé sur notre marché de Lyon? Quand il sera démontré que ce n'est qu'un âge différent de la Pie d'Europe, ou une variété du même oiseau, alors seulement on pourra la faire disparaître de la série des espèces. Pour ne pas trop nous appesantir sur une question qui nous menerait trop loin du sujet qui l'a motivé, contentons-nous de signaler encore un autre désavantage de l'application trop sévère du principe de la réduction des espèces; c'est de nous faire négliger une foule de formes ou de races, auxquelles on n'a attaché jusqu'à présent très peu d'importance. De ce nombre est la *Starna palustris*, Demeezemaker. Voici ce que m'a écrit à ce sujet cet ornithologiste distingué:—

"Bergues, le 27 Mars, 1863.

"L'an dernier, vous avez eu la bonté de m'envoyer une variété de Perdrix de couleur un peu gris-cendré. Connaissez-vous son origine, et croyez-vous qu'on en trouve encore de semblables dans la localité d'où elle vient?* Je vous fais cette demande, parceque depuis une quinzaine d'années je remarque une espèce ou race de Perdrix qui a du rapport avec celle-ci, et dont la couleur dominante est un gris-bleuâtre moins ondulé de roussâtre que la vôtre. Cette race existe dans notre pays. En voici l'historique. Cette Perdrix se trouve dans une contrée d'une dixaine

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[*] L'oiseau dont il est question ici a été trouvé au marché de Lyon, mais sans aucune indication sur son origine. Un autre exemplaire, acheté également au marché de Lyon, est, si je m'en souviens bien, un peu plus fort de taille que le premier.—L. O.-G.

de kilomètres de largeur sur une quinzaine de longueur bornée au nord par la mer, à l'ouest par la route de Bergues à Dunkerque, au sud par le canal de la Basse-Calène, et à l'est par la Belgique en dépassant la frontière de quelques kilomètres. De cette espèce, une trentaine de sujets ont été tués à ma connaissance, tant jeunes qu'adultes ; tous les jeunes étaient identiquement semblables, et tous les adultes également semblables entre eux. Ceux-ci ont le jaune de la tête et de la gorge comme la Perdrix ordinaire, ainsi que le fer à cheval de la poitrine; mais les couleurs en sont très-pâles, comme dans l'individu que j'ai reçu de vous. Cette espèce ou race est connue des chasseurs du pays, qui l'appellent *Perdrix de marais*. Il est vrai que le terrain sur lequel on la trouve se compose en partie de terres basses et de marais desséchés; mais on ne la trouve jamais dans les marais proprement dits. Les deux premières que j'ai vues avaient été tirées du même coup de fusil, ce qui me portait à croire qu'il y en avait une compagnie entière. C'était à peu de distance au-delà de la frontière de Belgique. Peu de temps après j'en ai tué deux individus isolés; il semblait qu'elles ne recherchaient pas les Perdrix ordinaires, ou qu'elles en étaient rebutés. Huit jours après, mon fils en a tué encore une aussi isolément, et successivement des chasseurs m'en ont envoyé en communication. Au mois de Février dernier, il y en avait une au marché de Dunkerque; une compagnie entière existait près de Bergues il y a deux ans, mais elle a bientôt été détruite. Un de nos gardes en a vu ensemble au mois de Janvier (1863). Enfin douze sujets, tant jeunes qu'adultes, ont été préparés dans le pays.

" Il me semble que ces Perdrix, se reproduisant toujours sous la même livrée, ne peuvent pas plus que la *Perdrix de montagne* (dont je ne connais que deux exemplaires tués dans le Pas de Calais), être considérés comme variété de la Perdrix grise."

Je dois à l'obligeance de Monsieur Demeezemaker un jeune sujet de cette Perdrix, qui offre les caractères suivants :—

Même disposition de couleurs que dans la *Starna cinerea*. Les taches longitudinales du bas du corps sont mieux marquées et plus apparentes, attendu qu'elles sont d'un blanc assez pur, et rehaussées de chaque côté par une teinte noire assez foncée. Les teintes générales sont un gris-cendré, un peu bleuâtre.

Gorge d'un blanc-terne. Rectrices au nombre de 16, et tirant au café au lait sombre.

Agréez mes salutations respectueuses.
Votre dévoué,
Léon Olph-Galliard.

Florence, Mars 1864.

Monsieur,—En vous communiquant les renseignements suivants, j'ai cru me rendre en quelque manière utile à la science, et vous m'obligerez beaucoup si vous voudrez bien l'insérer dans votre accrédité journal ornithologique 'l'Ibis.'

Dans ces dernières années j'ai eu la favorable occasion d'acquérir deux espèces d'oiseaux qui viennent enrichir la faune ornithologique de la Toscane, et qui n'avaient été encore trouvées dans cette partie centrale de l'Italie, d'après ce que l'on a dit jusqu'ici, et même d'après l'ouvrage sur l'ornithologie de la Toscane du célèbre Professeur Paul Savi.

La première de ces deux espèces est l'Aigle de Bonelli, *Falco* (*Pseudaëtus*) *bonellii*, Temm., dont j'ai reçu un individu à la fin du mois de Novembre 1861, et l'autre dans le mois de Décembre 1862, qui tous les deux furent tués dans la ferme royale de Coltano près de Pise.

Ces Aigles étaient deux femelles en livrée de jeunesse; mais j'ai été fort étonné de voir, dans les premiers jours de Février de l'année courante, mis en vente au marché public, un individu mâle adulte. Je m'approchai aussitôt pour en traiter l'achat, dans le but d'enrichir ma collection d'un objet ainsi intéressant; mais quelle fut ma surprise, lorsque en examinant avec soin l'oiseau, je m'aperçus qu'on avait lui arraché les plumes des ailes et de la queue, de sorte à ne pouvoir déterminer que le sexe!

Le vendeur m'assura que de ces oiseaux en furent trouvés deux individus dans un bois très-épais dans la province du Mugello, mais qu'il ne fût possible d'en tuer qu'un seul; l'autre, probablement la femelle, on l'a vu rôder pendant deux ou trois jours dans les bois des environs, mais qu'en suite elle disparut. Le même vendeur ajouta que par les assauts de ces deux Aigles on avait perdu quelque petit agneau et plusieurs pigeons, par cela on leur donna la chasse, laquelle ne procura qu'un seul individu.

La seconde espèce que j'annonce est la *Caccabis petrosa* (Gmel.), trouvée de même par moi au marché public le 19 Décembre 1863, et qu'avait été tuée le 17 du dit mois dans les montagnes aboutissantes au Maremmes Toscanes, avec la *Caccabis rufa*, Linn., et dont je n'aurais parlé parce qu'il aurait pu arriver qu'abordant sur les côtes de la Toscane des vaisseaux provenants de Sardaigne et de Sicile, dans lesquels on transporte souvent de ces oiseaux en grand nombre, l'individu en question se fût délivré de l'esclavage ; mais la perfection de la livrée qui ne portait aucune trace de domesticité m'en a fait douter.

Dans l'année présente, à la même époque et dans la même localité, ont été pris trois autres individus, dont deux mâles et une femelle, ce que m'autorise à la regarder comme une espèce qui vient s'ajouter au catalogue des oiseaux de la Toscane.

Je profite de cette occasion pour annoncer qu'aussi en Toscane on trouve la *Caccabis græca*, Briss., dont M. Savi doutait, quoique assuré de ce fait par plusieurs chasseurs, ce que m'a été répété par un de mes amis, médecin et ornithologiste distingué, qui en a tué plusieurs fois sur les hautes montagnes limitrophes aux campagnes Romaines.

Cependant en vous priant de vouloir me pardonner la liberté de vous adresser la présente, j'ai l'honneur d'être

Votre très-humble serviteur,
H. Benvenuti.

Porto S. Giorgio (Marche), March 16, 1864.

Sir,—Pending the publication of observations by Professor De Filippi, of Turin, on a *Syrrhaptes paradoxus* shot in the neighbourhood of Novara (Piedmont) about the middle of February of the present year, it has struck me that, since the article which has been announced in the last two Numbers of the 'Ibis' has not yet been published, this notice might not be altogether void of interest. The specimen in question is a female, and has been placed in the Museum of the University of Turin. Another specimen of the same species was obtained, in July last, in the neighbourhood of Rimini. It had one wing broken by the shot,

and was kept for a time alive, but motionless and indifferent to surrounding objects, and died after a few days. This specimen (which is in the worst possible condition) is preserved at Imola, near Bologna, in the collection of a certain Signor Liverani. I noticed that in it the yellow on the throat and on the sides of the head is very vivid, that the fore part of the neck and the breast are not spotted, and that the filaments of the wings and tail are not very long.

I remain, Sir, &c.,
Dr. THOMAS SALVADORI.

The Rectory, Breadsall, near Derby,
23rd January 1864.

SIR,—A very fine adult male of "Bewick's Swan" (*Cygnus bewickii*) was shot, on the 18th inst., on the Trent, at Newton-Folney, near Burton-on-Trent, by G. A. Smallwood, Esq., of the Rock, Newton-Folney. When killed, it was in company with a pair of Trumpeter Swans. The specimen has been most admirably preserved by Mr. John Cook, bird-stuffer, Market-place, Derby, in whose shop I saw it yesterday.

I am, yours faithfully,
H. HARPUR CREWE.

The following extracts are from a letter of Mr. Tristram, dated Jericho, 4th January 1864:—

"We have now been five weeks in Palestine, and our first month's work, which we did not expect to be very successful or interesting, has been such as to satisfy our moderate anticipations. It has been spent on the road between Beyrout and Jerusalem, and most of it in rainy and often bitterly cold weather.

"The last few days we have spent in the Jordan-valley. Here we have entered upon a new field, which has surpassed our most sanguine hopes in abundance, if not in variety. In *Raptores* we have seen everything, and killed nothing. This result we attribute to the clearness of the atmosphere, which deceives us and leads us to fire at too great a distance, and, perhaps, also has an elevating effect upon the shot (!). The Common Buzzard, Marsh-Harrier, and Kestrel are the only captures.

"*Athene meridionalis* is very common. I have got half-a-dozen specimens; also one very fine Owl with naked tarsi, which I do not know.

"We have also a Raven which I do not know, but it may be one of Heuglin's African species. We found it in one place associating with the Common Raven. The most interesting birds on our list of captures are, *Ixos xanthopygius, Cinclus aquaticus, Saxicola lugens, Garrulus melanocephalus, Picus major,* var.*, *Hirundo savignyi* (common all winter on the coast), *Alcedo rudis, Parus major* (var.?), *Cisticola schœnicola, Phœnicopterus antiquorum, Cygnus musicus, Charadrius asiaticus, Larus ichthyaëtus,* and *Larus audouinii.* It is curious to find the Fieldfare along with *Ixos xanthopygius* and numbers of *Sylvia atricapilla*—all the males of the latter having in winter what is considered the female plumage. In the last three days we have been very hard at work, and our list already comprises *Ixos xanthopygius, Crateropus chalybeus, Nectarinia osea, Ammoperdix heyi, Amydrus tristrami, Halcyon smyrnensis, Drymœca gracilis, Regulus modestus, Phyllopneuste,* sp.?, *Saxicola eurymelæna, Ammomanes,* sp.?, *Turtur ægyptiacus,* and one or two others which I expect will prove new. All the above we have found in tolerable abundance. The *Nectarinia osea* is a lovely bird, as one sees him glancing in the sunlight in pursuit of his mate from bush to bush; he is something like the Long-tailed Tit in his actions.

"The weather here is very hot—warmer than the finest summer days in England. We have taken four species of Bats: one a large animal, 14 inches from wing to wing; another with a tail longer than his body. In other mammals we have not been very successful. Wild boars, ichneumons (the Egyptian species), two species of rats, a mouse with a bristly back, and a mole very different from ours, are all my list comprises. Four or five species of fish, two or three of serpents, four or five batrachians, and nearly a dozen of lizards comprise our catalogue of cold-blooded Vertebrates. But, as it is the worst season for them, we may expect much hereafter from this beginning.

"Lowne reports 220 species of plants collected in flower, and various *Coleoptera*; and in land-shells we have done very well. Our geological collection has been satisfactory, as fossils have been found everywhere, but all of the same character,—I think triassic. Next week we propose to start for the south and east sides of the Dead Sea, as far up as Kerak. Of course we shall have but little opportunity of naturalizing here; but it will be a great success to be able to get there at all.

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* Probably *Picus cruentatus,* Antinori.—Ed.

"With the exception of *Cypselus galileensis*, which we cannot find, we have already secured specimens of all the species which have been mentioned by former travellers in Palestine.

"P.S.—January 7th. I have shot before breakfast this morning two *Hirundo rupestris*; and in the rocks, six of a new species of Swallow, very like it, but nearly black, and twice its size; also three specimens of a bird with the habits and actions of a Redstart, but lead-coloured body and jet-black tail. We added, today, to our list a hare, two specimens of a marmot, and a *Pterocles senegalensis* (?)."

Subsequent letters from Mr. Tristram announce the return of the party to Jerusalem in the beginning of February, and that a selection of the most noticeable objects from the bird-collection had been despatched to the "Editor of the Ibis," by the hands of Mr. Medlycott, who was leaving the party. The number of skins collected up to that time amounted to about 750. About the 21st of the month they were intending to leave Jerusalem again for the Sea of Galilee and Land of Bashan—an excursion that would probably take them about two months. In the next Number of this Journal we hope to be able to give our readers some account of the principal novelties contained in Mr. Tristram's collection.

Herr v. Pelzeln mentions, in a letter from Vienna, that the Imperial Zoological Cabinet had lately acquired, through one of the Catholic missionaries in the Bari Negro-land, in Central Africa, a specimen of the interesting Courier (*Hemerodromus cinctus*) figured in the 5th volume of 'The Ibis' (pl. 1).

The last accounts of our correspondent Freiherr Th. von Heuglin are dated the 4th June 1863, from Lake Rek, on the White Nile, whither he had accompanied Madame Tinneh and her daughters. He had been very dangerously ill from dysentery and scurvy, and had been left behind by his party, who were some ten days' journey ahead of him; but, having recovered to some extent, had set out to rejoin them. V. Heuglin's latest ornithological news is given in Cabanis' Journal, pt. iv. 1863.

* * *

Dr. G. Hartlaub sends us the following provisional list of a collection of birds lately made in the Feejee Islands by an expedition, "half mercantile, half scientific," sent out by Messrs. Cesar Godefroy & Co., of Hamburg:—

1. *Astur rufitorques*, Peale.
2. *Leucocerca lessonii* [*], Gray.
3. *Artamus mentalis*, Jerd.
4. *Zosterops flaviceps*, Peale.
5. —— *analoga*, H. et Jacq.
6. *Ptilotis carunculata.*
7. *Myzomela nigriventris*, Peale.
8. —— *solitaria*, Puch.
9. *Erythrura pealii*, Hartl.
10. *Aplonis marginalis.*
11. *Cuculus simus*, Peale.
12. *Coriphilus fringillaceus.*
13. *Platycercus splendens*, Peale.
14. —— *personatus* [†], Gray.
15. *Columba vitiensis*, Peale (?).
16. *Carpophaga latrans*, Peale.
17. *Peristera erythroptera.*
18. *Ptilonopus mariæ.*
19. —— *fasciatus.*
20. —— *luteovirens.*
21. *Ardea sacra.*
22. *Ardeola patruelis.*
23. *Totanus brevipes.*
24. *Charadrius longipes.*
25. *Rallus philippensis.*
26. *Zapornia umbrina.*
27. *Porphyrio*, sp.
28. *Anas superciliosa.*
29. *Phaëton æthereus.*
30. *Sula fiber.*
31. *Sterna panaya.*
32. —— ——, sp.
33. *Anoüs leucocapillus.*
34. *Gygis* ——, sp. [‡]
35. *Procellaria cærulea* (Gm.).

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[*] This is by no means a *Leucocerca*, but a very curious form to be separated generically.

[†] This is not a younger bird of the former, but a very distinct species.

[‡] "Alba unicolor, dorso vix conspicue canescente; fascia nuchali utrinque per oculum circumscripte nigra, rostro pedibusque nigris."

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XVIII.—*Remarks on* Dr. A. Leith Adams's "*Notes and Observations on the Birds of Egypt and Nubia.*" By S. Stafford Allen.

Having myself paid a good deal of attention to Egyptian ornithology, I may perhaps be permitted to make a few remarks on the interesting paper communicated by Dr. A. Leith Adams to the first Number of 'The Ibis' for the present year, since it must be obvious to all that, by thus comparing notes upon any given point, we shall arrive at more certain conclusions than would otherwise be the case.

With most of Dr. Adams's remarks I cordially agree; but on those points where my opinion differs from his, it must be borne in mind that, though greatly less experienced as an observer, I have had more extended opportunities for observation, having spent four seasons in Egypt, engaged in collecting and studying birds. Nor have my wanderings been limited to the Nile Valley, though they include two voyages up to the First Cataract, as I have seen a good deal of those parts of the country usually left unvisited by winter travellers, amongst which are the Faioum and (more especially) the Delta. Having also besides, by degrees, picked up a tolerable knowledge of Arabic, I have been enabled to communicate directly with the natives—always a matter of importance in these investigations.

I propose to place at the end of these remarks a concise list of the species which have come under my notice, reserving for a future opportunity detailed accounts of interesting kinds. Most of them were shot by myself, and, where that was not the case, by persons with whom I was well acquainted, who gave me an opportunity of examining the specimens, either in the flesh or recently skinned. A few species noted, which I had not seen elsewhere, were amongst the supplies of game and wild-fowl brought for sale to the market in Alexandria.

As I am now likely to be resident in Egypt for the greater portion of the next two or three years, I may hope not only to add very considerably to this list, but to obtain interesting information on the points alluded to by Dr. Adams respecting seasonal migration, &c.

BUTEO RUFINUS, Rüpp.

BUTEO VULGARIS.

The Common Buzzard certainly does not deserve that appellation in Egypt. I shot one in the Delta in March 1861, which is the only time I have seen it here. The former species is rather common, varies greatly in plumage, and is a most dangerous bird to meddle with when wounded. I have seen an Arab nearly faint with the pain when, having incautiously approached to secure the bird, it buried all four of its powerful talons in his hand, from which they were not easily disengaged.

CIRCAËTUS GALLICUS.

This species is by no means rare in Egypt, and prefers the open country. Might not this have been the bird Mr. Adams saw and alludes to (p. 9)?

MILVUS ÆGYPTIUS (Gm.).

MILVUS ATER (Gm.).

I cannot agree with Dr. Leith Adams in what he says about these birds. The Black Kite is certainly the commoner bird in the Nile Valley above Cairo, though I believe a close examination would show that the Arabian is there too in considerable numbers. In the Delta, however, the reverse is the case; for of the hundreds I have seen close, and the dozens I have shot, chiefly in order to identify their eggs, there was not a single *M. ater*. In the neighbourhood of Cairo, where these birds are particularly abundant, feeding upon the refuse of the slaughter-houses and any other carrion they can get hold of, the numbers are pretty equally divided, being, if anything, in favour of *M. ægyptius.*

The Arabian Kite may be seen breeding in any village in the Delta with the most complete fearlessness. A pair nested annually in a tree in the court of the house where I resided in Cairo, which enabled me to study their domestic economy to great advantage. The waxy-yellow bill and red colour readily distinguish the adult birds of this species; but the young are easily confounded with *M. ater* by any one not accustomed to them.

ELANUS MELANOPTERUS

I found equally common, at least as high up as Thebes (where several were seen and shot), as it is in the Delta. It is said to breed in the Mokattam Hills, behind Cairo, but I have never yet been able to meet with the nest. The iris in the immature specimen is of a bright salmon-colour, in the adult of a brilliant carmine-red; and this bird, when recently shot, with its pure white breast, delicate dove-coloured back, and black shoulders, is an exquisitely beautiful object, though the soft, Owl-like feathers of the face and throat and breast invariably lose their delicate gloss when the skin has been prepared some days. This species is crepuscular in its habits, feeding largely on mice and beetles, as well as on small birds. It has the sclerotic ring of the eye very deep, and altogether shows strong *Strigine* affinities.

TINNUNCULUS ALAUDARIUS.

TINNUNCULUS CENCHRIS.

The Kestrel (which, by the way, runs much smaller in size than British or Maltese specimens), as Dr. Adams observes, is excessively abundant in Egypt, and breeds in April, choosing for that purpose palm-trees, sycamores, or old ruins, particularly the half-ruined "koubbehs" or mosque-tombs of Arab saints, which are of frequent occurrence.

Its near relation, the Lesser Kestrel, is not seen in winter, but comes northward in March and April in flocks, often associated with *Erythropus vespertinus* (Linn.), with which it seems to have considerable affinity. I have observed in the former species (*T. cenchris*) that the sexes appear to keep separate in their peregrinations, the females decidedly preponderating in numbers. The reverse is the case with the elegant little Merlin, which Dr. Adams seems not to have met with. Stragglers are seen occasionally during the winter months, but in March and April it is rather a common bird. The birds shot in Egypt are almost invariably males, as I have only seen two females out of dozens shot by myself and others.

Circus pallidus (Sykes).

Circus cyaneus.

Circus cineraceus (Mont.).

All these Harriers are found in Egypt, the first being the most abundant. The females of the two former species differ so slightly that it is very difficult to distinguish them; but the male birds are easily recognizable. Of *C. cineraceus*, all the specimens I obtained were females, which sex has greatly the advantage of numbers in all three species.

Strix flammea.

Brachyotus ægolius (Bp.).

Bubo ascalaphus.

Athene meridionalis (Risso).

I have shot all these four species of Owls in Egypt, where all, except the Short-eared, are resident throughout the year. The latter comes in April.

It is rather surprising that the little *Scops zorca* (Bp.), so abundant in passing at Malta, should not be found in Egypt.

Caprimulgus isabellinus, Rüpp.

This is not a common bird in Egypt, and I found it for the first time last year in the Faioum, where they inhabited cracks and excavations in the earth. I procured two distinct varieties, one much darker than the other. As evening approached, they would make their appearance, flitting about upon noiseless wing, like ghosts in the twilight, and at intervals emitting a subdued croaking cry. I suspect that *C. europæus* is here also, as I once found a wing and feathers of a bird killed by a Hawk which appeared to be those of a Common Goatsucker.

HIRUNDO CAHIRICA, Licht.

HIRUNDO RUSTICA.

The Oriental Chimney Swallow is common throughout the winter in Egypt; but in April the true *H. rustica* makes its appearance, and then the two species are frequently seen together. I think this fact is a strong argument in favour of their specific difference. The white of all the specimens of our Chimney Swallow is tinged, more or less, with rust-colour.

ALCEDO ISPIDA.

CERYLE RUDIS (Boie).

I have seen the Common Kingfisher as far up the river as Thebes and Ermeut, but only as a straggler. It is common in Lower Egypt during the winter months, particularly near Cairo, frequenting the little canals and pools, which it evidently prefers to the open river. I have taken the eggs of the Black and White Kingfisher, in April, near Damietta, where many pairs were breeding. Dr. Adams says, December, but there is often a very marked difference in the time of nesting of birds of the same species in Upper and Lower Egypt. Is Dr. Adams correct in calling this species the *Belted* Kingfisher?

PHYLLOPNEUSTE TROCHILUS.

PHYLLOPNEUSTE RUFA.

PHYLLOPNEUSTE SIBILATRIX.

PHYLLOPNEUSTE BONELLII.

Of these little Warblers, the two first are winter residents, the Chiff-chaff especially being very common, whilst the two latter make their appearance in the spring, as do the greater part of the small insectivorous birds, *Sylviidæ* and others.

RUTICILLA TITHYS (Scop.).

RUTICILLA PHŒNICURA.

The Black Redstart is plentiful in the gardens round Cairo in the winter months, but out of about twenty specimens I only got two males. The Common Redstart is not seen during the winter, but comes from the southward in April.

SAXICOLA LUGENS.

SAXICOLA PALLIDA.

SAXICOLA DESERTI, Rüpp.

SAXICOLA ŒNANTHE.

SAXICOLA STAPAZINA.

SAXICOLA AURITA.

SAXICOLA ISABELLINA, Rüpp.

The Chats find a congenial home in Egypt, and consequently abound here, not only in species, but in numbers. The first, *S. lugens,* is found more or less commonly, in suitable places, from Cairo upwards. The two next belong rather to Upper Egypt, particularly *S. pallida,* my specimen of which, with others, was obtained by my friend J. H. Cochrane at Thebes. The only Wheatear found near Cairo (or rather Ghizeh) in winter is *S. isabellina* of Rüppell, described by Bree under the name of *S. saltatrix,* and which Dr. Adams seems to have mistaken for *S. œnanthe,* ♀.

The true *S. œnanthe* appears in March and April in the locality mentioned above, together with *S. stapazina* and *S. aurita.* When the two birds are compared, *S. isabellina* will be found to be a larger and heavier bird altogether, with marked differences of bill, tarsus, &c. Last spring I made a very complete series of the last four species, in the neighbourhood of Ghizeh. I have also found the plain of Thebes a particularly good place for those Chats peculiar to the upper country.

PETROCINCLA CYANEA.

PETROCINCLA SAXATILIS.

I am surprised that Dr. Adams did not find the Blue Thrush at all events tolerably common. I have shot as many as four or five in a morning, about Medinet Haboo, and have constantly seen them in various other places, mostly among ruins or where excavations had been carried on.

Its congener, the Rock Thrush, comes northward in the end of April, and evinces a very strong partiality for Arab burying-grounds, where one or two are always to be found at that season of the year. The plumage of two or three males, shot near Ghizeh last year, was far finer than any among a large series of Maltese specimens.

Corvus umbrinus, Hedenborg.

The Raven of Egypt belongs to this permanent variety, if it be not a distinct species. All the specimens I have examined are constant in having the umber-brown head and shoulders, whilst the eggs differ considerably from those of *C. corax.*

I tormented myself very considerably, last April, in the vain attempt to rear a hopeful family of five young Ravens, which appeared to be all mouth and stomach, for nothing came amiss to them. They, however, all came to an untimely end from (as it appeared to me) a mixture of *coup de soleil* and camel-riding. I have never seen the Raven in flocks as Dr. Adams speaks of, or otherwise than in pairs; but have occasionally observed large flocks of what I took to be Rooks in the Delta, though unable to shoot one to identify it.

Passer domesticus.

Passer salicicola.

These two species are about equally common in Egypt; nor do they always keep separate, as, in firing into a flock, I have killed specimens of both. Those of the former which I have taken home for comparison have proved smaller than the usual English birds—a peculiarity which is very distinctly observable in the case of many species common to both countries. On one occasion I found a nest of *P. domesticus* built in that of a Kingfisher (*Ceryle rudis*), some four feet inside the river-bank; and when the Sparrow's nest was removed, the *eggs* of the original possessor were found underneath.

Turtur senegalensis (Bonap.).

Turtur auritus (Ray).

The Palm Dove remains in Egypt all the year round, and is exceedingly tame and familiar. It breeds in the groves of orange- and lemon-trees in the Delta, but even more frequently in the dilapidated woodwork of houses, or even in the rooms themselves. In the house where I lived in Cairo, a pair of these Doves would insist upon building their nest on a cornice near the ceiling, in spite of attempts to keep them out or dislodge them, much to the vexation of the lady of the house.

The Common Turtle comes down in flocks from the upper country in spring, and is highly esteemed by the French, Maltese, and Levantine sportsmen, who distinguish them from the resident species by the name of "Tortorelli di Passo."

PTEROCLES EXUSTUS.

PTEROCLES CORONATUS (Licht.).

PTEROCLES GUTTATUS (Licht.).

The first of these Sand-Grouse is abundant both in Upper and Lower Egypt, and often found in very large flocks, the other two species being less common. I shot a pair (♂ and ♀) of *P. coronatus* at El Kab, out of a small flock which came down to drink at one of the pools. Their cry was rather hoarser than the "shrill guttural croak" of the commoner species, which it nevertheless much resembled. Though generally shy, the Sand-Grouse (*P. exustus*) will sometimes lie very close, and, until acquainted with their habits, it is almost impossible to distinguish them, even when lying on the bare surface of the ground. What you take for half-a-dozen stones suddenly start into life, and fly off with amazing rapidity.

I think Dr. Leith Adams must have been misinformed when he says that *P. exustus* breeds in June, as I obtained two eggs, and the live female bird, which had been caught on them, in April last year.

HOPLOPTERUS SPINOSUS.

Most Nile travellers who have paid attention to the subject will agree with Dr. Adams in thinking that the "Zic-zac" proper has better claims to the honour of being the "*Trochilos*" of Herodotus than *Plurianus ægyptius*. I cannot say that I ever heard the additional legend he gives as current amongst the Nile boatmen. The bird is known among Europeans as "Spy" and "Espion" from its wary habits, and "Dominicain" from its black-and-white plumage.

IBIS RELIGIOSA.

I have not been more successful than Dr. Adams in finding any evidence of the presence of this bird in Egypt, though I have heard of *Ibis falcinellus*.

SCOLOPAX MAJOR.

SCOLOPAX GALLINAGO.

SCOLOPAX GALLINULA.

RHYNCHÆA BENGALENSIS.

I shot the Great Snipe in May 1863 at Damietta, but it is a rare bird. The Common and Jack Snipes are abundant during the winter in Lower Egypt and in the Faioum, and a few may be met with in suitable localities here and there up the river. They leave Egypt about the middle of March. The Painted Snipe, though now and then found up the river, is at home in the N.E. corner of the Delta, near Damietta, where it breeds about the end of May. What, if any, is the difference between *R. bengalensis* and *R. capensis*?*

HIMANTOPUS MELANOPTERUS.

RECURVIROSTRA AVOCETTA.

Stragglers of the former species are occasionally seen in Upper Egypt; but they are very numerous in the Delta and also in the Faioum, where they are found in small flocks wading about the pools which are the invariable accompaniment of every Arab village. The same holds good to some extent of the Avocet, though that bird prefers the sand-banks and shallows in the river.

CASARCA RUTILA.

TADORNA VULPANSER.

Not common; once obtained at Esné. The Common Sheldrake is often brought to market in Alexandria, but I have never seen it up the country.

ANAS BOSCHAS.

ANAS STREPERA.

RHYNCHASPIS CLYPEATA.

DAFILA ACUTA.

MARECA PENELOPE.

FULIGULA FERINA.

NYROCA LEUCOPHTHALMA.

QUERQUEDULA CIRCIA.

QUERQUEDULA CRECCA.

All these Ducks are more or less abundant, being found in large flocks on the sand-banks in the river, or scattered in smaller parties about the inland marshy pools and canals. But the localities beyond all others favoured by them are the large, shallow, brackish lakes, surrounded by marshes, which extend at intervals all along the coast, from Alexandria to Port Said (near the site of the ancient Pelusium), the most important being Lakes Mareotis, Etko, Bourlos, and last, but not least, Menzaleh, on which the town of Damietta stands. To the three last of these lakes, particularly, immense numbers of Ducks resort, which suffer no perceptible diminution from the efforts of the Arabs of the neighbouring villages, many of whom make their living by snaring and netting them for sale.

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* We believe them to be identical (cf. Swinhoe, P. Z. S. 1863, p. 314). —ED.

In consequence of the increasing demand for game and wildfowl in Alexandria, and the high prices given, Lake Mareotis swarms with "pot-hunting gunners," whose never-ceasing noise and worry are fast driving the Ducks away from their favourite haunts in that neighbourhood, to seek less disturbed quarters elsewhere. The poor Coots, which apparently have not enough sense, or too much love of home, to follow their example, stand a fair chance of being exterminated, in spite of their numbers, before long, as they are massacred and brought to market by sackfuls at a time.

LARUS FUSCUS.

LARUS ARGENTATUS.

Dr. Leith Adams appears to have given the name of the Lesser Black-backed, through inadvertence, for that of the Herring-Gull. The former, however, is here, and is common near Damietta, though I have never observed it inland.

RHYNCHOPS ORIENTALIS, Rüpp.

SYLOCHELIDON CASPIA, Brehm.

GELOCHELIDON ANGLICA, Brehm.

STERNULA MINUTA, Boie.

HYDROCHELIDON HYBRIDA, Bp.

STERNA, sp.?

Of five species of Terns hitherto noticed, the Gull-billed is the only one that I have seen far inland. All the others are more or less common in the lower part of the Delta, particularly in the neighbourhood of Damietta and Lake Menzaleh. I feel confident that a close examination would show that, at the least, five or six more species of Terns, most of which breed here, frequent the same localities.

I once saw the curious Scissor-bill a little below Thebes, but did not succeed in shooting it. It has also been killed at Damietta.

My remarks have extended to so much greater length than I had expected, that my list will have to be postponed a little while longer, during which time I may probably be able to add some more species to it. In conclusion, some apology is perhaps due for having kept pretty much to the ground touched upon by Dr. Leith Adams in his paper; but my excuse for having done so is the desire I felt to establish certain points, to correct others that seemed to require it, and, lastly, the necessity there was for adopting some plan for giving the most useful information within moderate limits.

XIX.—*Notes on Birds breeding in the Neighbourhood of Sydney.*

By E. P. Ramsay, Esq., of Dobroyde.

[Continued from vol. v. p. 447.]

6. The Yellow-tufted Honey-eater (*Ptilotis auricomis*, Gould, B. Austr. iv. pl. 37.).

The Yellow-tufted Honey-eater, although very common about Sydney, is perhaps one of the most beautiful species we have; nor are the eggs of this species less beautiful than the birds themselves.

It gives preference to the more open underwood of young *Eucalyptus* and Wattle trees (*Acacia decurrens*), which are plentiful near Dobroyde, Enfield, and Paramatta, rather than to the dense scrubland nearer the coast. I have met with this species as far inland as Manar, between Braidwood and Goulburn, where, through the kind assistance of my young friend, Mr. Herbert Gordon, I procured several rare specimens both of birds and eggs. Like most of its tribe, the Yellow-tufted Honey-eater is very partial to fruit, and, during the latter end of February and throughout the month of March, the pear-trees with us swarm with this and many other species. During the orange-season also they visit us in great numbers, and many may be seen fighting over the half-decayed fruit with which the ground at that time is literally strewed. They seem very fond of exercising their pugnacious propensity upon the larger birds. Should a Hawk, an Owl, or sleepy Goatsucker make its appearance near them, it is sure to be attacked; and even their own species, being wounded and crying out, often shares the same fate. Ofttimes they may be seen to cluster upon the bare stem of a branch, huddling up together, so that many tread one upon the other, and scratching as if holding a jubilee over a vanquished foe, until perhaps another from a neighbouring tree will dart into the midst and put them all to flight.

This species remains with us throughout the whole year, breeding earlier than the generality of Honey-eaters. We have eggs in our collection taken early in June, and as late as the end of October, during which month they sometimes have a third brood. August and September seem to be their principal months for breeding.

Upon referring to my note-book, I find that I captured two young, well able to fly, upon the 18th July 1863, but during some seasons birds breed here much earlier than in others. The nest is a neat but somewhat bulky structure, open above, and composed of strips of the Stringy-bark tree* (*Eucalyptus*, sp.). The total length of the nest is about 4 inches by from 2½ to 3 inches wide, being 2 in. deep by 1½ in. wide inside. The eggs, which are usually two in number, are of a pale flesh-pink, darker at the larger end, where they are spotted and blotched with markings of a much deeper hue, inclining to salmon-colour; in some the marking forms a ring upon the thick end, in others one irregular patch with a few dots upon the rest of the surface. When freshly taken, they have a beautiful blush of pink, which they generally lose a few days after being blown. Their length is from 10 to 11 lines by 7 to 8 in breadth. Some varieties have a few obsolete dots of faint lilac; others are without markings, save one patch at the top of the larger end: like most of our Australian birds' eggs, they vary much in shape and in tint of colour. The site selected for the nest is usually some low bushy shrub, among the rich clusters of *Tecoma australis,* or carefully hidden in the thick tufts of *Blechnum* (*B. cartilagineum*), which often covers a space of many square yards in these clumps, where it clings to the stems of the ferns. I have several times found two or three pairs breeding at the same time within a few yards of each other. The ferns and *Tecomæ* seem to be their favourite places for breeding, although the nests may often be found placed suspended between forks in the small bushy oaks (*Casuarinæ*).

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* The innermost bark of this *Eucalyptus* is used much as ties for wood, hay, and straw, &c.; when twisted or plaited, it is found to make a tolerably strong rope. Almost all our birds use the inner bark of it for building their nests, lining them with fine shreds of the same material, or sometimes with silky cotton from the native plants.

In the nest of this Honeyeater I have several times found the egg of a Cuckoo: this egg is of a very pale flesh-colour, 11½ lines long by 8½ broad, and usually without any markings. I have only seen one specimen with a few dots of black and dark reddish-brown upon a pale-flesh ground. From the nests of a species of *Ptilotis,* and also those of *Melithreptus lunulatus,* I have also taken the same eggs. I have not yet satisfied myself what species of Cuckoo they belong to; but probably it will turn out to be *Cuculus cinereus,* Gould.

On January 30th 1864, I shot a very beautiful variety of *Ptilotis auricomis,* of a pale yellow colour above and below, having the ear-coverts and whiskers, front and sides of the head, throat, outer webs of tail, and wing-feathers brighter and a shade deeper in colour; the shafts of all the feathers white; the bill and claws brownish horn-colour; iris dull blue; feet and legs bluish lead-colour. I have since seen another specimen several times feeding in the pear-trees in our garden.

Both these specimens seemed to be very much scouted by the rest of their species, feeding quietly by themselves, sometimes in the clumps of *Loranthus* or upon the manna on the sides of the gum-trees (*Eucalyptus*), and occasionally in the garden upon the pear-trees.

Several times while about shooting one of these, I noticed a Yellow Robin (*Eopsaltria australis*) perch close beside him, take an inquisitive look, and then uttering a harsh squeak fly off, as if quite disgusted with such a "freak of nature."

XX.—*Cursory Notes on some of the Birds of Siam.* By Sir Robert H. Schomburgk, Ph.D., F.R.S., Corr. Member of the Zool. Soc. of London, &c.

The following observations on some of the birds of Siam do not aim at a scientific description; they are merely notes from my pocket-book and from the journal which I kept during my travels in the interior of Siam. It has been my object to dwell more on the customs and manners of the birds that came under my notice than to describe them scientifically. They must be taken for what they are worth. The Siamese name of the bird, where I could ascertain it, has generally been given *.

1. Haliastur indus (Bodd.). (Ih-hioh.)

The graceful motions of this bird when on the wing are admirable. We see him swifting over the surface of the river; then suddenly he rises up into the air to a height of several hundred feet, sailing around in circles of greater or less extent, apparently without the smallest exertion; for not a pinion is seen to move; only now and then the bird changes the position of his body from the horizontal to the oblique, now to the right, now to the left; he pauses, and down he darts to the river's surface (in seemingly a straight line), seizes with his talons his prey, one of the finny tribe, and, rising up for a short distance, flies to an adjacent tree on the river's bank, there to devour it, or carries it off to his nest.

2. Coracias affinis. (Nook tackah.)

This handsome bird belongs to the Bee-eaters. It is dressed in blues of all shades, azure and smaragdinous included, and then shading off into green and grey. His greatest enemies are the Crows. The bird is by no means uncommon in the gardens attached to the houses in Bangkok; but scarcely have the Crows in the precincts discovered one, when they make a simultaneous attack upon him. The Roller endeavours to avoid them, now by making gyrations in the air, now by lighting upon the branches of some tree, uttering all the time pitiful cries, nor are his tormentors satisfied until he leaves the grounds. The beautiful blue wing-feathers of this bird, principally the primaries and scapularies, are exported to China for tiny fans; and such are even manufactured here, but they are not so well made as those that come from China.

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* Sir Robert has kindly forwarded specimens of most of the birds mentioned in his notes, which, though in a very bad state of preservation, have enabled me to add the correct scientific name of the species where he has not himself inserted it. Besides the species mentioned, his collection contains examples of *Hierax eutolmos* (Hodgs.), *Micronisus badius, Porphyrio smaragdinotis, Tringoides hypoleucos,* and several others enumerated by Mr. Gould in the list of Sir R. Schomburgk's birds given in P. Z. S. 1859, p. 151.—P. L. S.

3. HALCYON ATRICAPILLA.

I found this handsome bird, with its long, almost quadrangular bill, of a fine red, up the Menam. Its plumage is even richer than that of the Bee-eater (*Coracias affinis*); but the feathers (which are used for fans) are not so large.

4. HALCYON LEUCOCEPHALA (Linn.).

And next we have *Halcyon leucocephala*, certainly decked less splendidly in feathers of azure and smaragdinous in colour, but nevertheless striking in its plumage.

5. HALCYON COLLARIS, Scop.

This is a pretty little species, with fine blue wing-feathers, those on the back and head passing into metallic green; the rump white, and a band of the same colour between the head and wings. It is of small size, but when sitting on the dry branches of a tree overhanging the river looks very pretty.

6. ALCEDO BENGALENSIS.

This is a very pretty species of its kind; it is small—no more than 6 inches in length. When on the wing, the brilliancy of its plumage is easily discerned; less so when sitting. It selects generally the dry branch of a tree close to the river's edge, and there it watches its opportunity to dart into the water after the finny tribe, which, from its watch-tower, it has observed near the surface of the river.

Another remarkable bird of the *Halcyon* family is a white-spotted species, which I met with first about 120 miles up the river. Then I lost sight of them until we were about 300 miles from the sea, when I saw them again, swifting over the river's surface, now and then dipping into it after the fry. I do not believe that this species is described, and am not sure whether the bird so curiously spotted is not changing its plumage or is a young specimen.

7. UPUPA NIGRIPENNIS, Gould. (Nook mon quau.)

Our European Hoopoe is an elegant bird; but although the species found in Siam is not so large in size, it does not lose much in comparison. They visited us during our sojourn at Rahaing (southern boundary of the Lao country) while we were staying at a "wat," and there they came in large numbers. The "wat" possessed some majestic fig-trees, which were their general abode. They hopped about here from branch to branch, or came to the ground looking out for insects, and then they raised their crests and made themselves more conspicuous. Our presence did not seem to interfere with their occupation while on the ground. There was one of those which were daily frequenters which, by malformation, had its beak like our Crossbill (*Loxia*), and I was perfectly astonished to see with what ease it nevertheless picked up its food.

8. ANTHREPTES LEPIDA (Lath.).

I will extract a passage from my journal up the Menam* respecting this beautiful bird:—"Since we left Consawan (literally, 'Place of Heaven') I have not noted a single palm-tree; on the other hand, the coral-trees (*Erythrina indica* and *E. fulgens*) abound, and, as they are just now in flower, offer a very gorgeous appearance. This genus, like several other tropical plants, has the peculiarity of clothing itself in masses of bright flowers before any leaves appear; in this instance scarlet and pink are the prevailing colours, and not a green leaf is to be seen. Numerous insects are buzzing around its flowers; and splendid Sun-birds (*Nectariniæ*), the representatives of the *Colibri* or Humming-bird of the western tropics, are flitting about, sipping the honey of its blossoms.

"The metallic lustre of the coat of this lovely bird is of a greenish colour; the secondaries of the wing the same, edged with blue; the primaries black; head of a buff colour; throat blue; rump green; the tail ending in two long central feathers, metallic green for half their length, and black where they diminish to almost a thread-like form at the end of the feather. These birds, when flitting around the flowers, are uncommonly rapid in their movements; indeed they resemble in that respect the Humming-birds, to which in many other respects they may be compared, not excepting their tiny feet, described by some as substantial and strong, but not so in those that fell under my observation."

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* A full account of Sir Robert Schomburgk's interesting journey to Xiengmai, in the Laos States, will be found in the 'Journal of the Asiatic Society of Bengal,' 1863, p. 387.—ED.

9. ANTHUS RICHARDI, Vieill.

10. A. PRATENSIS (Linn.).

11. A. RUFULUS, Vieill.

These Pipits remind us of our own Pipits; indeed, according to the determination of Mr. Gould, the two former are identical, and show the wide range these birds possess. *A. rufulus* selects the dry branch of a tree fronting the river, and pours forth its strain, certainly not so strong and harmonious as our Skylarks, but pleasing indeed.

12. TRERON PHŒNICOPTERA (Lath.). (Nock slou.)

This beautiful green Pigeon is occasionally found in flocks near Bangkok. During an excursion in my boat up the Klong Canal (Kut Mai), I saw, early in the morning, on a tree close to the canal's edge, upwards of twenty; several were shot by a single discharge of the gun. The prevailing colour of its plumage is a yellowish green; the hind part of the head a purplish violet, followed at the nape by orange-buff, which extends to the breast; the rump is lilac-blue; the shoulders of the wing of a purplish lilac; the large coverts green, edged with yellow. The same refers, but in a less degree, to the primaries and secondaries, which are otherwise almost black, excepting that the edges are yellow; on the lower part they are of a slate-colour. The feathers of the tail are, for more than half their length, yellowish green, ending in black above and slate-colour below; that part which is yellowish green above is black below. There are, close to the root of the tail, some reddish feathers, edged with white.

I found this beautiful Pigeon likewise while ascending the Menam, about 300 miles north of Bangkok. I have never seen a specimen kept in a cage.

There was another handsome Pigeon at Xiengmai, certainly dressed in less vivid colours than the preceding, but much larger in size. The head, neck, and rump are of a pale Indian red; on both parts of the neck there are a number of small feathers, black at their base, light blue at their upper edge, which, according as the light falls upon them, shine more or less brightly. The mantle is black, the feathers composing it being edged with Indian red, extending thence to the coverlets of the wing; the anterior part of the mantle is of a slate-blue, and the feathers approaching the tail increase in depth of colour, their edges being a shade lighter.

13. COLUMBA INTERMEDIA, Strickland. (Nock kirap.)

I must not omit, when speaking of Pigeons, the Blue Pigeons which are found in such large numbers in the "wats," or Siamese temples, where they are held almost as sacred as were the Geese of the Capitolium. I have some hesitation in pronouncing them the offspring of *Columba livia*, though there is much similarity between them. In almost every "wat" in Siam there is a tower of greater or smaller size, with numerous holes for the accommodation of the Pigeons. There they are allowed to make their nests and multiply. The "talpoins," or priests, forbidden by their religion to kill any living creature, respect the Pigeons almost more than any other of the feathered tribe. But food they do not get from the priests; they must look out for themselves in that respect, and they prey upon the rice-fields when the fruits of the Indian fig-trees and those of others that give them berries no longer supply them. Though they become consequently depredators upon the cultivation of man, this does not lessen their being generally privileged to an asylum within the "wat." It is but seldom that the priests give permission to shoot Pigeons within the "wats."

A few days previous to my arrival in Bangkok some European gentlemen entered a "wat" with permission, as they understood, from the priests to shoot Pigeons within its precincts. They were mistaken; for a party that, previous to their arrival, had misbehaved and were told to leave the "wat" refused to do so, but finding they were rather in a minority to the priests and their disciples, who quickly assembled, they withdrew, threatening they would speedily return in increased numbers to do mischief to the priests.

The "wat" being famed for the number of Pigeons that resorted there, it so happened that another party of Europeans, entirely unconnected with the former, and ignorant of what had occurred, entered the "wat," and were mistaken for those that had misbehaved, and set upon with bludgeons, brickbats, and other missiles by the infuriated priesthood. Some of the gentlemen were seriously injured; and it became one of my first duties, after my arrival as Consul, to insist upon this wanton attack being punished. The priests had to pay the surgeon's expenses for attending to the wounded, the cost of a gun which it was said was broken over the head of one of the sportsmen, and a very heavy fine to the Siamese royal treasury—a lesson to teach them to behave on other occasions with more charity and moderation. However, notice was given from the British Consulate that none of Her Majesty's subjects had the right to shoot within the precincts of a "wat" without the especial permission from the superior or from some other priest of authority. What would be said and done at home if some Siamese entered our churchyards and cemeteries with fowling-pieces, to amuse themselves with shooting birds within their precincts?

The Domestic Pigeon is kept in Bangkok by many of the native and foreign inhabitants. The second king has a great pigeon-house opposite his library, which can be open or shut by mechanical means from the window of his room. Some of the Chinese possess flocks of fifty or more. Opposite to my residence, on the right bank of the river, one of the Chinese has not less than fifty. They frequently take an airing by flying round the ships anchored in the river in front of their domicile. These Pigeons are almost entirely white in colour. I have seldom seen one that was spotted, which would show that they do not intermix with the blue "wat" Pigeon. There are occasionally found mongrels of the Fan-tailed Pigeon, which have been produced by intermixture with the common House Pigeon.

Their tails, however, although somewhat raised when wooing or quarrelling, never form the perfect fan of the true kind.

14. Turtur suratensis. (Nock kow.)

Besides the preceding, we have around Bangkok, and almost everywhere, as far as I have explored Siam, that nice Turtle-dove, the *T. suratensis*. It is such a favourite and so easily domesticated, that it is found in cages in many of the houses of the natives and foreigners. It commences its cooing before daybreak, whether in its own haunts or kept in a cage. At noon its cooing is heard again, when free in the forest, and lasts for about an hour; but when caged, I have seldom heard its sound at that hour. While an invalid at Aughin*, on the eastern coast of the Gulf of Siam, sent there to recover from an attack of dysentery, and still too weak to cross the threshold, I resided in a house near the Granite-ledge with its Kettle-holes, from which the place has received its name. Here there was a fine copse of wood, a favourite resort of the Nock kow at the morning's dawn and at noon. Their half-melancholy sound when cooing to each other had not a disagreeable, nay, rather a soothing effect upon me. I listened with pleasure, and missed them sadly when during rainy days (of which there were just then many) the sound was not to be heard. When accustomed to the cage, as I have already observed, this Dove will announce the break of day; but I have not heard it at noon.

15. Corvus culminatus. (Kah.)

The Crow is too conspicuous a bird not to attract the attention of any person who comes for the first time to Bangkok. Long before daybreak their cry commences. *Kah, kah* resounds from all directions; and if a pair have weighty subjects to discuss, their cry becomes deafening, and others hurry to the spot to assist in the argument, until sometimes twenty or thirty are assembled, every one having a word to add. If there is a shot sent amongst them, and one falls, the uproar is immense: they fly round their fallen comrade from all parts; others hurry to the spot, assisting in the clamour. They are very daring and impudent. When the fowls were fed, they came to partake of the meal; nay, they even flew into the open verandah to share the meals with the dogs. They knew so well when this happened in my house, that two or three were usually watching on the roof of the kitchen until the rice was carried up; and although the dogs snarled, they were indefatigable until they succeeded in snatching some of their food away, with which they flew forthwith to the nearest tree. When they have found out a newly sown rice-field, there they proceed *en masse* to commence their depredations, should the sower have neglected to leave watchers. They are likewise great robbers in the plantain-walks, places where the *Musa paradisiaca* and *M. sapientum* are cultivated. I know this from my own observation. Of a group of Banana-trees, I could scarcely save a branch until I had some of the thieves shot, and their skins hung up as a warning close to the fruits.

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* The King of Siam calls Aughin the "sanatorium" for Europeans.

Their roosting-place is generally in the precincts of "wats" (Siamese temples), whence they make excursions to their feeding-grounds, and return in the evening. In certain states of the atmosphere, during drizzling rain and northerly winds, their flight is impeded; they fly quite low, perhaps not more than 40 or 50 feet from the ground, in irregular directions, and seem so exhausted that they frequently alight on trees to gather new strength to continue their way. I have seen a similar occurrence under such circumstances in the case of the wild Pigeons in St. Domingo, when in their flight they were sometimes knocked down with sticks from the tops of the flat-roofed houses, and numbers were shot, until, after a few days' sport (the authorities in the commencement winking at it), the mandate is proclaimed by sound of drum that no person shall discharge firearms within the precincts of the city. I have already mentioned that the Crow is the inveterate enemy of the Nock tackah (*Coracias affinis*).

16. STURNOPASTOR NIGRICOLLIS. (Nock king-klong.)

The remarkable features of this bird are its white head, and the warted cere, of a bright yellow colour, which extends from the eye to the base of the beak. The feathers of the head, excepting the extreme hinder portion, are white, and of a different structure from the general plumage, making one almost believe, when the bird is seen at a distance, and unacquainted with its nature, that they are hairs. A band of deep black extends from the hinder part of the head, round the throat, to the chest, where it is nearly 1½ inch in breadth; the prevailing colour of the rump is white, extending to the tail and its lower feathers; the mantle blackish brown. Wings: the primaries and secondaries black, the latter edged at their upper end with white. This refers likewise to the coverlets; but some of those overlying the primaries are entirely white.

These birds are the merriest of the feathered tribe that visit us near our residences. They appear in flocks: seldom is a solitary individual to be seen. When the want of rain has dried up the ground, they cannot search for insects under the surface, strongly formed as their beak is. Then they resort to trees and shrubs to look for them, perching frequently upon branches not strong enough to sustain their weight. Sometimes there are two King-klongs on the same branch, and the twig hangs down, with the birds clinging to it. But the most amusing part is to see man and wife (or perhaps they are merely lovers) selecting a convenient branch of a tree and there fronting each other *tête-à-tête.* The husband, or lover it may be, commences to nod his head towards his *vis-à-vis,* and ejaculates a sound similar to the pronunciation of "pretty set," the female nodding her assent by a hum consisting of one or two notes. The shrill sound of alarm for the whole flock to decamp, whether on the ground or on trees, is very different from the "cooing." A shower of rain has fallen, after a long drought: the consequence is, pools of water are formed on the surface soil; for the ground below is hardened, and the water cannot immediately penetrate. Then the Nock king-klongs make their appearance in flocks, wading through the pools where only an inch or two deep, picking up the insects and worms brought to the surface by the inundation. They are accused of being great depredators upon the fruits of the orchard. I cannot vouch for the accuracy of this statement; but they are, without doubt, the destroyers of many noxious insects; and, this asserted in their favour, they are, as already previously observed, the most lively and cheering birds in

Bangkok. There is always a leader to the flock, and where he flies to and alights, the rest follow; he also gives the signal for rising from the ground. They are rather heavy upon the wing, and, when a flock is distant from the observer, they might be taken for pigeons. They will not live in cages; and although I have had several, they soon died, so that I have considered it cruel to repeat the experiment. They make their nests in the hollows of the trunks of trees, principally those of the palm.

17. GRACULA INTERMEDIA, Hay. (Nock undong.)

Who, acquainted with Indian ornithology, has not heard of this famous bird—one of the handsomest, one of the most docile and clever of its congeners? Its ability of imitating the human voice can only be surpassed by the American Mocking-bird. It is lively, will dance or hop at its master's call, and do many other amusing tricks. The bird is too well known to require description; I will mention, in lieu, a little anecdote of my first acquaintance with the Mina. The state reception on presenting myself as Her Majesty's Consul to the second King of Siam being over, he requested me and other officers of the Consulate to accompany him to his private residence, fitted up in European style, furnished with scientific instruments and a select library of works in the English language. While we were in the king's sitting-room, before which was a verandah, I heard coming from that locality a very unbecoming altercation, as I thought, between an old woman and a young girl. I did not understand the Siamese language; therefore I was unacquainted with the purport of it. I frequently turned my glances towards the verandah to see the disputants, but could not observe any person. The war of words between the contending parties apparently increasing, my glances were more frequently sent in that direction; I considered it certainly *outré* that His Majesty should permit such a dispute in his presence. He observed it, and then told me the uproar outside was made by a bird—a Mina; and, leading me to the verandah, there was the originator of the noise in a handsome cage. But it seemed our visiting him disturbed his talkative powers, and he was silent, "not opening his lips," if such an organ the feathered tribe possess. I have since received as presents and I have bought

Minas, and I consider they greatly surpass Magpies and Starlings in talking powers, and that they vie even with the Grey Parrot. I will not bring the Raven into comparison, as that bird is so inferior to the Mina in its imitation of the human voice.

The Mina is to be found in the mountains about 300 to 400 miles to the north of Bangkok. Several specimens were shot at that distance during my journey to Xiengmai; they were certainly much more plump than any I had seen in cages. I know nothing of their habits when at large in their own haunts. The Mina is a very delicate bird, and it is difficult to keep them for long in health confined in cages even in their native land. I have been told it is but seldom they are brought alive to Europe; and if so successfully, they soon die after their arrival*.

18. Lanius nigriceps.

This is a very handsome Shrike. In a line with the upper mandible, extending for about an inch and a half towards the wings, the feathers are of a deep black; the neck and breast are white, the mantle of Indian red; the primaries of the wing black, but near their base they are white; the tail-feathers tipped with yellowish white. I know nothing of its manners.

19. Passer montanus. (Nock atshah.)

The Sparrow is well represented by a congener, not so large as our Domestic Sparrow, but equally familiar and impudent in manners. Let a new house be erected, and, even before it is finished and tenanted, the Sparrows take possession of the verandah and build their nests between the rafters and tiles or slates, considering themselves now domiciled, with free access to the verandah and breakfast- or dinner-room. There they hop about, and become so familiar that one might almost seize them with the hand. They are quarrelsome amongst themselves, and a pair of cock-Sparrows will dispute the possession of a fair one which is close by to witness the feud, the combatants grasping each other, and often falling to the ground.

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* This bird has been not unfrequently in the Zoological Society's living collection. A bird, obtained in October 1859, lived nearly three years in the Gardens.—Ed.

They breed several times in the course of the year, and have from four to five eggs: addled eggs, or young ones that succumb to premature death, are thrown out of the nest. I have frequently had the crevices between the beams of the verandah blocked up; but they have generally contrived to remove the obstacle, although it seemed sometimes incredible that they could have effected it.

Their chatter commences long before the rising of the sun; nay, I frequently hear them during night. It continues the day through, but is most animated about sunset.

During a certain time, when the seeds of a grass are in season, they collect in crowds on the ground. I have known on such occasions from twenty to thirty fall at a single discharge of the gun.

20. PLOCEUS HYPOXANTHUS (Daud.).

When ascending the Menam, I met with this pretty Yellow Weaver-bird (*Ploceus hypoxanthus*), which constructs its nest, kidney-shaped, in a skilful manner, of culms of grass: the opening is lateral. There are always a number of nests on the same tree. The Weaver-birds are social. How far their singing power extends I have not been able to ascertain. Though the bird is not uncommon, principally in the Lao country, I never heard one of them sing in such a strain as others of the Finch tribe. They assemble in prodigious numbers in the rice-fields when the grain is ripe, and are great depredators, joining others of the feathered tribe in the spoliation. Scaffoldings are erected to overlook the rice-fields, where a youth is stationed to drive them away by hue-and-cry and rattle.

21. TIGA INTERMEDIA, Blyth.

This Three-toed Woodpecker is a handsome representative of this interesting family; its head is black, spotted with white; back crimson; wing-coverts green, with golden yellow; primaries black; tail-feathers of the same colour. Thus arrayed, it shows itself one of the most gorgeous of the family.

I found it at Raheng, on the southern frontier of the Lao country.

22. GECINUS DIMIDIATUS (Temm.).

This is another fine Woodpecker of a greenish plumage, with metallic lustre; wings greyish black, barred with white spots; throat yellowish, and the head tufted with red.

23. MEGALÆMA PHILIPPENSIS. (Nock tshang-tong.)

The "Tshang-tong" is a solitary bird; it selects a convenient branch of a tree, and there sits, pouring out, in measured terms and melancholy strain, a sound compared to the pronunciation of *pock-pock*.

24. CYMBIRHYNCHUS NASUTUS.

This interesting and splendid bird was first met with when I ascended the Menam at Cansovan (translated literally, the "place of heaven"). The bill, excessively broad at its root, strong and horny, is at its upper part of a beautiful smaragdinous blue, below bright yellow (these colours are lost in preserved specimens); the back is of a glossy black; wings and tail of the same colour, but the feathers of the wing nearest the back are of a pure white; those of the throat, belly, and near the base of the tail are of a deep red, like the plumage of the Red Chatterer (*Phœnicocercus carnifex*), to which the Siamese bird may in general be compared, distinguishing itself, however, by the remarkable form of its beak.

25. CENTROPUS PHILIPPENSIS. (Nock budh.)

The Crow-Pheasant of the colonists has much the manners of the *Crotophagæ*, or Black Witches of the western tropics. Like them, they live in societies; but whether they make a nest for the community, where the females deposit their eggs and take their brooding in turns, I cannot say. The sound which the bird produces is loud. As I have already observed, they are gregarious; and when I approached for the first time a copse of wood where there was a colony of them, I was astonished at the deep sound which emanated from it, and ascribed it to birds of the size of an Eagle. But after I had brought down some with my gun, I found that they were not larger than our Cuckoos, to which family they indeed belong. It is said that they announce the turn of the tide by their cry, in rivers flowing to the sea, where such influence is felt; the same is said of the Nock changtong, but navigators will hardly pay regard to such indications when desiring to avail themselves of a favourable tide. This bird's movements between the branches of shrubs and trees along the roadside are very swift, and it follows the passers-by for considerable distances, as if to ascertain their characters. In its voice it differs materially from our European Cuckoo.

26. EUDYNAMIS ORIENTALIS.

This is another species of Cuckoo, with its plumage of a uniform black. Its Siamese name is "*Quow-tam.*"

27. EUPLOCAMUS PRÆLATUS, Bp. (Kai-pha.)

It soon became known, after I had taken up my residence in Bangkok, that I was anxious to have a small collection of live animals and birds from the interior; and such were brought to me from time to time for sale. Upon one occasion I was told that some had just arrived, and I went to inspect them. There were some Loris, an albino of *Hylobates lar*, and some others, likewise some birds. A fine Pheasant amongst the latter at once attracted my attention: it was unknown to me, and I wanted to purchase it; but the price demanded, according to our standard here, was outrageous, and I left the place without effecting any purchase. Our European mail arrived next day, and brought me, amongst others, a letter from my friend Mr. Gould, enclosing a drawing of a bird of which Mr. Crawfurd had given a notice on his return from the East Indies to Europe, and which evidently depicted one of the same species that I had seen the day previous. Mr. Gould informed me that, as far as was known to him, there was only the skin of one specimen of that bird then in Europe, and urged me to endeavour to procure others. I purchased, of course, the bird I had seen; and only regretted that, for the sake of ornithological science, it was to be sacrificed in order that its skin might be sent home. I wished much to get another, but a long time elapsed before I could succeed. The bird which I now purchased had those beautiful feathers on the back, near the scapulars, from which some have called it the Fire-backed Pheasant, although the latter is *Euplocamus vieilloti*. The middle tail-feathers of the Kai-pha bend over in an arch, resembling in that respect much more the Bankiva and other cocks of the East than a Pheasant.

The Kai-pha I speak about was quite tame, and ran about in the verandah of my residence. Meanwhile a bird was brought to me for sale, said to be the female; and although it had the character of a Pheasant, and the want of spurs showed it was a hen, the difference of the plumage was so great that I commenced to doubt whether it was the female of this species. But when I considered what difference there is between the male and female of our Pheasant in the same respect, likewise in *Phasianus versicolor*, and still more so in the true Fire-backed Pheasant (*Euplocamus ignitus*) (the female of which, by-the-bye, resembles much the one of the Kai-pha), I did not doubt any longer. I receive sometimes visits from the governors and others of the Lao country, provinces to the north of Siam; and having learned that it was a native there, I questioned them, and they pronounced unhesitatingly that it was the female, and that it was principally to be found in the eastern states of the Lao or Shang country, especially at Phre or Phé. It is asserted that the bird likewise frequents parts of the Malay peninsula. I saw one in a domesticated state in Moulmein, which I was told had come from there. Although the Kai-pha, in splendour of plumage, cannot be compared either with the Gold or the Silver Pheasant, still there is something graceful in its figure and stately in its walk. I have already observed that I procured another bird after the one the skin of which I sent home. I allowed him to leave his coop and to walk about in the house, where he picked up insects, apparently more congenial to him than the every-day food of paddy (rice in husk). When he saw a spider or ant crawl up the walls in the room, he would fly up several feet to catch it. He was very partial to plantains and bananas, indeed to almost any kind of fruit: this predilection he may have acquired in his state of domestication. Both in his coop and when walking about in the verandah, he emitted frequently a faint sound; but when disturbed or alarmed, the sound was harsh; and when flying up, it was with a whirring noise, similar to that of our Partridges, but stronger. The female, though so different in plumage, has the same manners as the male. I possessed two; one was quite wild, and could not be allowed to leave the cage, but the other was as tame as

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cry, which served likewise as a notice to all other birds in the neighbourhood of approaching danger.

29. Porzana phœnicura. (Nock ihkoh.)

This Water-hen is not very common. They are very shy; and it was but seldom we could procure them as an addition to our commissariat.

30. Edolius paradiseus. (Nock sang-saēoh.)

The Nock sang-saeoh appears only periodically in Bangkok. Its peculiar tail, ending in two shafts, with lanceolate-shaped tips at the end (these shafts as long as the body of the bird), give it a curious appearance. I have never heard the bird singing; its only sound may be likened to the mewing of a cat. I am not aware that the Drongo Shrikes, or Indian Butcher-birds, are famed for song. I am almost led to believe that at cer-

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the male. I placed her in the same cage with him; but he commenced to peck her, and she had to be removed. When both were stalking about in the verandah, they remained at a respectful distance from each other. I believe our Pheasant associates only with the female at certain periods. I contemplated taking the Kai-pha and one of the females with me to Europe on my return, but the first suddenly showed on one occasion that he was ill, and although allowed to walk about in the garden to search for himself the food he considered best, died nevertheless. The two females are, to all appearance, still in good health. Amongst the collection of live animals and birds which the King of Siam presented to the Emperor of the French, I was told there were some specimens of this bird, male and female; but I have not learned whether they have safely arrived.

28. TRINGOIDES HYPOLEUCOS. (Nock bathorn.)

This is a representative of the Snipe tribe (*Scolopacidæ*). I believe it is a *Tringa*. Though the plumage is principally of a sombre grey, its being crossed by bands of white, and the elegant form of the bird, give it a pretty appearance. The hinder toe is very small. Wherever our guns, while travelling between Rohaing and Xiengmai, could bring down one of these birds, powder and shot were not spared; they were so excellent in taste. They generally announced their presence by a peculiar cry, which served likewise as a notice to all other birds in the neighbourhood of approaching danger.

29. PORZANA PHŒNICURA. (Nock ihkoh.)

This Water-hen is not very common. They are very shy; and it was but seldom we could procure them as an addition to our commissariat.

30. EDOLIUS PARADISEUS. (Nock sang-saēoh.)

The Nock sang-saeoh appears only periodically in Bangkok. Its peculiar tail, ending in two shafts, with lanceolate-shaped tips at the end (these shafts as long as the body of the bird), give it a curious appearance. I have never heard the bird singing; its only sound may be likened to the mewing of a cat. I am not aware that the Drongo Shrikes, or Indian Butcher-birds, are famed for song. I am almost led to believe that at certain seasons of the year the two long shaft-feathers are dropped, or that the female does not possess any.

31. Copsychus saularis (Linn.). (Nock king-ken.)

At certain periods of the year this splendid singer, which by some has been considered as rich in tone as our Nightingale, raises his voice early in the morning. It is but seldom that he is heard in the evening. The King-ken is a handsome bird; crown, nape, and chin black, with a purplish hue; the feathers of the mantle are of the same colour as far as the tail-coverts. The middle tail-feathers are of a deep black; the lower of a pure white, of which colour are likewise the feathers of the abdomen. This is the bird which here in Bangkok delights us so much by his song. Swift he is in his movements; it seems as if it were not his wish to exert his singing powers for any length of time in the same spot. Now he perches on a tree, now he sits on the roof of a house, pouring forth his melodious song. I have recently heard his song after sunset, though previously I thought he sang only in the morning. I have never seen the bird in a cage.

32. Copsychus macrurus.

We met with another species of the King-ken at Xiengmai, resembling the former, but the feathers of the abdomen are of an Indian red; and of the same colour are the tail-coverts, with white feathers underneath; the tail, moreover, being much longer than in the King-ken. I have been told that his singing powers are as great as those of his Bangkok congener. It is in appearance the prettier bird of the two.

33. Estrelda amandava (Linn.). (Nock Tsi Yumboo.)

This is a little bird, of which many are brought to Bangkok for sale. There are sometimes from ten to twenty in a rudely constructed cage. They frequent the rice-fields and pastures, and go in flocks. They are easily caught by a decoy bird, and fetch, when brought to Bangkok, from one *fuong* to a *soling* each (from 4*d.* to 8*d.*); but individual birds that are handsomely marked produce sometimes one *tical* (2*s.* 6*d.*) each. They do not live long in a cage; one by one they die, and, where there were perhaps twenty, in a few weeks none are left. I have not seen them in their native wilds; but even when caged they are lively, jumping from perch to perch, their movements accompanied by a twittering noise.

I no longer admit them to my small aviary, as such would be signing their death-warrant; and when they are brought as a present to me, I accept them, but let them go free.

34. MUNIA PUNCTULARIA. (Nock kah-tit.)

This pretty little bird, so nicely marked on its breast and abdomen, almost Partridge-like, lives along the banks of the canals which intersect the fields round Bangkok and other places. It constructs its nest in the grass. While the name of the Partridge is "Kah-tah," this little one is "Kah-tit," no doubt from the marking of its feathers.

35. TURDUS, sp.

A species of Thrush visits occasionally our gardens. I have heard its song, and although it cannot be compared with our European Throstle, it is nevertheless agreeable. It reminded me more of the notes of the Thrushes in Guiana and the West Indies than of our Throstle. The bird generally selects a tree as a favourite resort, and there it returns every morning for some time, but not for any lengthened period.

36. FRANCOLINUS PICTUS. (Nock kahtah.)

This beautiful bird is sometimes brought alive in cages to Bangkok, where they fetch handsome prices. Their general resorts are the rice-fields and pasture-grounds, which they frequent in flocks. I have been told that at night they retire to trees, and there they make their nests. I cannot vouch for this assertion; but since our own Partridge selects sometimes a tree for nidification, such may be the case with the "Nock kahtah." When surprised while on the ground, they rise with a whirring noise similar to our Partridge. They are caught by a decoy bird; however, they are not frequently found in cages at Bangkok; and I believe that those which are brought here soon perish: such has been the case with those which I have had in my possession. I found them plentiful at Aughin, on the eastern coast of the Gulf of Siam, and my huntsman brought them frequently as an addition to my breakfast or dinner.

They are as delicious as our home species. I have been told they are likewise to be found in the environs of Bangkok.

37. Palæornis javanicus. (Nock kang-mong.)

The Parrot-tribe is but sparely represented in Siam. I am only aware of two species; one I believe to be the Black-billed Parrakeet, and the second another species of *Palæornis*. The first fly in flocks, and are destructive to the rice-fields. I have not heard that they are brought to Bangkok in a domesticated state; and hence their power of imitating the human voice is unknown to me. The specimen sent herewith was shot at Aughin, on the eastern coast of the Gulf of Siam.

38. Palæornis alexandri. (Nock kae-oh.)

This is, I believe, likewise a *Palæornis*; but, as far as I have been able to ascertain, they are not seen in flocks. They resemble, to judge from description and coloured figures, in many respects the *P. alexandri*; however, those which I have seen did not possess the ring round the neck; but the few feathers of rose and bluish tint, which in the coloured representations of *P. alexandri* in the 'Naturalist's Library' are on the smaller wing-coverts, are not wanting in my specimen. The bill of the bird is red, and the natives here pretend that it is altogether a different bird from the one alluded to previously (Noch kang-mong). It is soon taught to imitate the human voice, and to whistle when in captivity, and is then trained. It is highly prized in Bangkok, principally amongst the Chinese; there is scarcely a shop of a "well-to-do" Chinese huckster, or a person of even a higher pretension in mercantile affairs, who does not possess a bird of this description sitting on a contrivance of the slightest mechanical skill—a kind of cross-tree with a piece of wood hollowed out, which swings below its perch by means of a string, and contains in one department food, in the other water. There it sits as merry, chattering, screaming, and whistling as any of its congeners, leaving the Grey and Festive Parrots out of view. A Kae-oh that speaks well fetches a high price at Bangkok; a common one, not yet initiated in that art, costs about 5 ticals (12*s.* 6*d.*). Their natural voice is very shrill.

39. Pelecanus philippensis. (Nock katung.)

The Pelican is by no means an uncommon bird on the coast, and is even met with at a distance of from 200 to 300 miles up the river. While approaching Kansowan during my journey to Xiengmai I saw a number circling in the air, showing in their gyrations now their black wing-feathers, now their white backs. There were a large number; still their gyratory movements never brought them into collision. They alighted on the river, swimming before us; I counted hurriedly about 150. They were shy, and would not allow us to come near enough to fire at them with probable success. They swam much quicker against the current than we could row; at last, being out of patience, two guns were fired at them, but none told, and up rose the flock to repeat anew their gyrations in the air.

The wing-feathers of these birds form an article of trade to China; they are principally exported for the manufacture of fans. The quills, for the purpose of writing, are as good as those of geese, but they are not used in that way either in China or in Siam. The birds which I saw in such large numbers up the river I consider to be *P. philippensis*; its congener, *P. onocrotalus*, is seldom to be seen. I copy the following from my note-book up the Menam:—"A White Pelican proudly navigated the river, throwing only a cursory glance at us. It was the first of that kind which I had seen during my present journey, though they are said to be numerous near Nockbuci, which by canalization is connected with the Menam. I gave orders not to fire at him, because I saw already that Kam, our lively bow-man, had taken up his rusty musket."

On another occasion, while going to visit Pechaburi, I saw one swimming in the Gulf of Siam. The common species is sometimes kept in a domesticated state amongst the fowls in the poultry-yard. They, of course, expect to be provided with fish by their owner; but some time since I possessed one which went upon its own fishing-expeditions, and returned in the evening to the poultry-yard. It seems that either the love of liberty or the scarcity of fish in the river carried him seaward; for one evening he did not return: I was told he had been seen at Paknam, about eighteen miles below Bangkok. I now possess two of these birds; and since they do not leave the premises, they receive fish at a cost of about 2*s.* 6*d.* per week. I may as well note that the Siamese eat Pelicans. I have tasted the meat, but found it coarse and fishy.

40. HYDROPHASIANUS SINENSIS. (Noch ih-kong.)

This splendid bird, with its toes so curiously formed, is found on the estuaries and lakes near the coast. The brilliant blue of the mantle (something like that of the Kingfishers), its long toes, and the curious appendage at the base of the beak of a reddish colour render it a remarkable bird. They are sometimes domesticated and walk about amongst the fowls, forsaking their natural food of shrimps and water-insects, partaking with the fowls their food of paddy, or rice in grain. Two were brought to me about two years ago; they were caged, and fed on paddy. They seemed so wild that I did not venture to let them walk about the premises. One died recently; the other is still alive and apparently quite well, but as scared on my approaching its cage as ever. They do not seem to be so much alarmed on a native coming near them.

It is difficult to give an idea of the large number of Wading birds we met on ascending the Menam. The following are extracts from my note-book:—

"*December* 30*th*, 1859.—As the evening approached, the horizon was almost darkened by the flocks of Cranes, Egrets, and Storks which came flying down the river, hastening towards their roosting-place. What admirable order they kept! Though there were thousands and thousands, there never was confusion in their progress. The first column extended across the river and beyond it (the river was here about 800 yards wide), others followed in parallel lines of larger or smaller extent; and from the centre, where we will suppose the commander-in-chief was situated, his aides-de-camp went to the right and to the left of the line, carrying his messages, and preserving order.

"*December* 31*st*.—A sand-bank which we passed this morning was literally covered with Waders. Mr. Clarke fired at them, which brought them speedily on the wing. They alighted on some trees a short distance off: the white plumage of the birds and their prodigious number made these trees appear as if they were covered with hoar-frost. Amongst them were a number of disgusting-looking Red-headed Vultures (*Vultur calvus*)."

"*January 3rd,* 1860.—I never saw, during our journey previous, such a number of Giant or Adjutant Cranes (*Leptoptilus argala*), Vultures, Pelicans, and Egrets, mixed with Scissor-bills and Sea-Swallows, as on this day, all crowded on a sand-bank that rose above the river. While approaching this assemblage of birds in our canoes, the Pelicans were the first to take the alarm, the Vultures the last. The Giant Cranes, before rising on the wing, made first three or four hops, probably to give to themselves the necessary impetus, in the same manner as I have seen the Jabiru (*Mycteria americana*). I may note here that I have frequently observed the Adjutant, while stalking on the sand-bank, picking up gravel and swallowing it. The Jabiru does the same."

I have now done with my cursory notes on some of the birds of Siam, except that I have to mention that bird so disgusting in its appearance, the Carrion Vulture (*Raing* in Siamese, *Vultur calvus*), much more so from the office assigned to him at Wat Seked, the great cemetery of the city of Bangkok, namely, to devour the flesh of those whose relations are not able to pay the fees for cremation or interment, as also where the law or custom does not permit burial. The corpses are thrown into an open space surrounded by a wall, near which a number of these birds have domiciled themselves. Formerly they had a scaffolding within the precincts of this dismal place, where, when satiated, they could rest and digest; but this has tumbled down, and no new one has been erected. The birds now take their rest upon the numerous and handsome trees of the *Ficus religiosa* which adorn Wat Seked, and are sadly disfigured by these slovenly birds. Their sense of smell is really wonderful: scarcely is the breath out of the animal when they assemble in numbers. In the case of a sheep which died on my premises, ten or twelve soon occupied the roof of the house; but where they came from so suddenly, this was the wonder to me; for Wat Seked, their nearest abode, is nearly a mile from the Consulate. Upon one occasion I saw the carcase of an Elephant floating down the river and a number of these birds sitting on it, tearing away the flesh. Mixed with them were Crows and the *Ih-hioh* Falcon (No. 1 of these notes). It was a strange sight—a floating island, as it seemed, covered with birds of dismal nature.

XXI.—*Some Account of an Ornithologist's Cruise in the Mediterranean.* By Lieut. R. M. Sperling, R.N.

During a year's cruise in the Mediterranean, I devoted all my spare time to the study of the avifauna of its coasts and islands, a few remarks on which will probably be interesting to some of your readers. Of course the first thing that strikes the observer is the great similarity of the bird-population of this part of Europe to that of our island. The greater quantity of the birds that one observes are of the same species as those that disport themselves in our own fields, forests, and fens. Goldfinches float amongst the thistles, like gaudy butterflies; Blackbirds and Thrushes dart warily about amongst the myrtle-bushes; while flocks of Greenfinches, Linnets, Chaffinches, Larks of various descriptions, Rooks, and Starlings feed in the fields and plains. The Hoopoe, Bee-eater, and Golden Oriole, rare with us, abound in the south of Europe during the summer; while, owing to the comparative absence of man, numbers of raptorial birds soar over the plains and levy taxes on their friends below.

Of the game-birds the Woodcock takes the first rank. Towards the end of November or the beginning of December they come down in thousands from the north of Europe, spreading themselves over all the coverts on the south shore: some go as far as the islands of the Mediterranean, and a few even reach the north coast of Africa. Snipe and all kinds of wild-fowl are in great abundance during the winter. The Red-legged Partridge is plentiful on the hill-sides in Greece, some of the Ionian Islands (Meganisi especially), and many other parts of the coast; but shooting them is hard work, the locomotion being more adapted for the Kangaroo than anything else, as it principally consists in jumping from one boulder to another, over intervening bushes; and when the birds get up, you will probably be struggling on your back in a hole. Add to these pleasures a blazing hot sun, and you have a pretty good idea of Red-leg shooting in the south of Europe. In the winter there are plenty of Quail, and, to my mind, there are very few better sports than shooting them, and very few birds better to eat, when they are shot. Leaving Europe for Syria, we come on the only other bird of the *Perdix* genus that is commonly met with, the Francolin: as he rises like a Pheasant from the arbutus-bushes and babeer-cane, frightened by the investigating nose of your spaniel, he dashes the trembling dew-drops from the before-mentioned cover, and starts with a loud *cark-cark* for denser shelter. Ah! beauteous bird, never shall I forget the gorgeous flash that the morning sun, peering over the distant Mountains of Lebanon, would throw over thy body as thou fleddest to thy other haunts: but I wander. Could not this bird be introduced to England? I believe that it rivals the Pheasant, both in beauty and flavour, and would exist in many marshy, scrubby places where the latter bird would not show his aristocratic beak. The climate would be no drawback; for some years ago it existed in great quantities in the south of Europe, where the weather is very severe in the winter.

I was a good deal at sea, and I need not say that I watched anxiously for any facts connected with the migrations of birds; and I found that in the spring, when going to the north, the greater number of them crossed when the wind was either westerly or north-westerly; while in the autumn, when going to the south, they appeared to prefer it in an easterly or south-easterly direction. From this I was led to infer that they do not like a fair wind to travel with, but prefer it on one side or the other; and also that they give the preference to its being on their left side. I do not state this as a fact without exceptions; for I have frequently noticed birds, especially the larger ones, which generally fly by day, crossing without any regard to the wind.

During the fortnight or three weeks in spring when the Quail are passing to the northward, should there have been a light wind from the west during the night, the island of Malta will probably be covered with them in the morning; but if the wind was from the eastward, it would be very little use looking for any. But when they are going to the southward in autumn (as I am told, for I have never been there at that time of the year), the right time to look for them is after the wind has been blowing from the eastward.

I think all birds cross the whole breadth of the Mediterranean in one night (unless there happens to be an island in their track, when they will often rest on it for a day); and it is perfectly marvellous to me how their instinct guides them so unerringly on their course. Man himself, with all his reason and intelligence, requires a compass and other complicated inventions; but birds, on the darkest nights, launch fearlessly into the trackless deep, and, guided by nothing but their instincts, accomplish the journey in safety. I do not feel certain that the wind has not something to do with it; for I recollect on one occasion seeing a flock of Turtle Doves utterly confounded by a sudden shift of wind: they settled on the ship, and continued making aimless excursions of about a mile in various directions, but only to return again to make a fresh start.

As far as my experience goes, it is only the smaller birds that generally cross during the night; but many of the larger ones, such as the migrating Hawks and Storks and Herons, cross during the day. I don't know what is the reason of this, unless it is that the smaller birds are afraid of being taken at advantage by man, birds of prey, &c., should they cross in the daytime. On September 4th, whilst beating into Rhodes with a fresh breeze blowing from Marmorice Bay, I observed a magnificent flight of Storks making their southerly migration to the shores of Africa and Egypt: some were flying in triangular-shaped flocks; but the greater part were in undulatory lines of nearly a mile in length, with their necks folded in, and their legs gathered up under their bodies. Sometimes they would fly at a height of 70 yards from the water, while at others they would swoop down so low as nearly to touch it. It is of course impossible to count the numbers in a large flock like this; I therefore took the mean of the opinions of several people who were looking at it, which made it to be 3250. However, I believe there is a large field left for investigation on this subject, and that the instinct of birds, as connected with their migrations, is one of those things that is anything but well understood at present. Why does the Cuckoo hurry to the south as soon as she has laid her eggs? I cannot help inclining to the idea that Starlings are partial migrants; for I have met them at sea in the migratory season: while the Robin, I am certain, migrates regularly; for I have very frequently met them at a long distance from the land; besides which, an ornithological friend of mine records it as a regular passenger through Malta.

Another thing that is not sufficiently considered when birds appear out of their correct geographical range is the lifts that they get from ships, floating objects, &c. I recollect myself a Russet Wheatear (*Saxicola stapazina*) favouring us with its company in the ship for two days, only leaving when we got to Malta, and subsisting quite contentedly the while on flies, &c. The stomachs of migratory birds are generally empty, or the contents of them might sometimes indicate whence they had started.

Malta I found to be a capital place for investigating the habits of birds, owing to the complete command one has over the whole island; because the many native shooters who are spread over it shoot any birds directly they appear, and send them into the market. Thus, if a flight of Quails, Doves, or Owls come in during the night, they are all shot in the morning, in the market at noon, and eaten by the evening; for the Maltese are an omnivorous nation, and are not at all averse to eating Owls, Bee-eaters, Hoopoes, &c. The number of birds indigenous to this island is very small, consisting of only ten species; but the visitors, regular, irregular, and accidental, amount respectively to 143, 98, and 9, whilst 15 of these occasionally stop to nidificate*. Four miles from the south shore of Malta lies Filfola, a small, rugged, uninhabited island. On one occasion I spent a day there, and found the Manx and Cinereous Shearwaters very plentiful, running about their breeding-places in the clefts of the rock. Higher up on the cliff Rock-Doves and Domestic Pigeons nested in abundance; the latter had entirely reverted to the original wild state of their congeners. Malta is generally considered a barren, desolate rock; but it is not nearly so black as it is painted. Besides being an island of great interest to the naturalist, its soft sandy stone of the Tertiary formation gives the geologist great facilities for digging out the fossils which abound there. The lover of birds will find plenty here in the spring and autumn; but there are no mammals, except a few weasels, hedgehogs, and rabbits, mice and, of course, the eternal rat.

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* For these numbers I am indebted to Mr. C. A. Wright.—R. M. S.

In spring the climate is delicious, the atmosphere being so clear that I have frequently seen Mount Etna, which is about 110 miles distant. If you wish to get a good idea of the place about this time of the year, go into a valley fragrant with wild mignonette, and blushing with clover and pimpernels; there light your pipe, and, should the west wind have blown during the night, from the dark shades of the carob-tree you will probably hear

> "The merry Nightingale,
> That crowds and hurries and precipitates
> With fast, thick warble his delicious notes,"

congratulating himself on his safe arrival from Africa, whilst the Spectacled Warbler floats singing in the air, and the Blue Thrush flings out his deep monotonous trill from a distant wall; besides which, if you don't like sitting still, you may easily bag ten or twelve Quails before breakfast during the shooting-season.

I don't think any one would regret going to the Mediterranean to shoot in the winter; for there is capital sport in a good climate, together with a sight of the classic celebrities of olden times. Within sight of Prevesa, the timid Woodcock may be flushed from the arching fern; on the Plain of Sharon you may break your neck boar-spearing, or shoot Red-legged Partridges (subject to the before-named drawbacks) on Mount Parnassus, close to the "umbilicus orbis terrarum." In the summer you can doff your coat, and fly the haunts of man, to lie on your back beneath the pure light of the eastern stars, while your yacht trembles and glides onward by towering Olympus or Sappho's Leap, under the mingled influences of the myrtle-loaded breezes and gentle tides that move in the violet sea. Or, should your fancies not be romantic, depart straightway for Syria, "do" Jerusalem, Baalbec, and Jordan under the auspices of a lying but gorgeous dragoman, buy Latakia tobacco and a jasmine-wood chibouque, wrought cunningly with gold wire and velvet by the haughty Turk,—or, in fact, start for a holiday and "do" what you like, not forgetting the Sand-Grouse on the plain of Baalbec; and, depend upon it, there will be deeper and nobler impressions left on the mind than are to be gathered in a trip to Norway or the Highlands. The ruins of Baalbec are a full-fledged epic poem in themselves.

It is hoped that the following list of birds may prove interesting to lovers of natural history. I do not presume to suppose that much novelty will be found in anything relating to such a well-known tract; but even should such not be the case, confirmation of facts (especially as regards the geographical range of birds) may be found, while anything relating to a part of the world so near England, and possessing a fauna so nearly similar, will probably prove acceptable. It was compiled between April 1862 and June 1863. I have taken nothing for granted, and I don't think there is a bird in it that I have not shot myself, or seen shot by a companion, while there are none that I have not had in my possession; and I can only hope that its perusal may prove as interesting to your readers as the task of collecting the materials has been to myself.

I have adopted the classification lately published by Dr. Bree in his 'Birds of Europe not observed in the British Isles,' as being the simplest.

1. PEREGRINE FALCON. (*Falco peregrinus.*)

Pretty plentiful on the south shore of the Gulf of Arta.

2. KESTREL. (*Falco tinnunculus.*)

Common round the northern and eastern shores, and at Rhodes.

3. LESSER KESTREL. (*Falco tinnunculoides.*)

Not quite so plentiful, I think, as its congener; they were, however, pretty common in Malta in the middle of April.

4. RED-LEGGED FALCON. (*Falco vespertinus.*)

Flew on board the vessel at sea, when close to the south shore of the island of Malta.

5. SPARROW-HAWK. (*Falco nisus.*)

At sea, between Malta and Corfu, a hen Sparrow-Hawk dashed by me like an arrow, grasped a small bird in her claws, and, after soaring round the ship for some time, settled on the mast-head, where she deliberately demolished her victim. She did not depart after her meal, but roosted on the ship that night; so that I was enabled to catch her as she slept. When Hawks can obtain sustenance at sea in this manner, it would account for their occasionally appearing within boundaries which are not natural to them.

6. HEN HARRIER. (*Falco cyaneus.*)

Common at Missolonghi and Patras, where it frequents the salt-marshes and plains. In the stomach of one specimen that I obtained were two lizards.

7. TAWNY EAGLE. (*Falco nævioides.*)

In the vicinity of Jaffa and Tyre. I am not quite certain of this, as never having obtained a specimen: my observations were confined to birds on the wing.

Vultures, Eagles, and Hawks are in great abundance in all parts of Syria; but I have found this to be the case round all the shores of the Mediterranean. Wherever there are large tracts of land but little frequented, there raptorial birds congregate, wisely ordained by nature to keep the smaller animals, &c., in check, but occasionally levying taxes on kids and lambs. Whilst cock-shooting on some of these plains, I have occasionally witnessed most beautiful flights, amongst which may be noticed that of a hen Sparrow-Hawk capturing a Woodcock.

8. SHORT-TUFTED HIBOU. (*Strix brachyotus.*)

On going cock-shooting on the morning of November 28th at Missolonghi, I found these birds very plentiful in the tufts of grass in the marshes; so I presume that a flight of them had arrived from the north of Europe during the night, as that was about the season for it. They were not shy, did not appear at all dazzled by the daylight, and when flushed generally resettled at a distance of about one hundred yards. Montagu says that this bird's migrations in England occur at about the same period as those of the Woodcock.

9. SCOPS OWL. (*Strix scops.*)

This is a very plentiful little bird about the shores of the

Mediterranean. In the beginning of April they sometimes arrive in Malta in very large flights during the night. I have also found them roosting in dry spots in the marshes. I take the following from my notes:—

June 2nd, 1862, *Corfu*.—Whilst walking by the side of a stream, between dusk and darkness, observed many Owlets. Presently one glided silently from behind me, and settled on the gnarled bark of an olive-tree. I fired, and imagined that I saw it skim along the fern about ten yards off; however, on running to the spot I could see nothing of it; but "Sailor," after diligently poking his nose about, suddenly rushed at it, which produced a violent hissing and snapping of the bill. Whilst stooping to admire the little fellow's pugnacious attitude, it suddenly abandoned the defensive and darted off into the darkness; but luckily I saw its horns standing in relief against the sky, again from the branch of an olive-tree: this time I bagged it, and its skin is now safely rolled up and labelled. On dissection it proved to be a female, with two eggs in her ovary.

10. ROOK. (*Corvus frugilegus.*)

Very common in Greece during the winter, feeding principally in the plains and marshes; but I was never able to discover that they nested there. All that I shot were young of the year, which leads me to believe that it is only the young Rooks that move to the southward during winter. Some of them cross the Mediterranean, as my friend Mr. C. A. Wright records it as a bird of passage through Malta.

11. JACKDAW. (*Corvus monedula.*)

Common in Malta, where it breeds in the fortifications round the town and in the sandy cliffs of the shore.

12. MAGPIE. (*Pica caudata.*)

I observed it in Albania during the summer, and in abundance both at Missolonghi and Patras during the winter, where two or three of them were generally to be seen anxiously watching the "rooting snouts" of the half-wild pigs, availing themselves of any grubs or worms turned up by them. I have never noticed anything to lead to the idea that these birds migrate.

13. JAY. (*Garrulus glandarius.*)

The common Jay is pretty plentiful in Corfu. I shot young ones, that could scarcely fly, on the 2nd of June.

In Syria I saw a Jay pretty commonly, which I then took to be the English one, as its appearance, manners, and note exactly resembled it; but, as I never shot one, I could not be certain. The probability, however, is that it was the Black-headed Jay (*G. melanocephalus*), as I believe our bird is not found there.

14. COMMON STARLING. (*Sturnus vulgaris.*)

Enormous flocks of these birds frequent Greece during the winter. I never saw them anywhere but in the salt-marshes, while during the summer I noticed none at all; I am, therefore, led to believe that they migrate more or less. I never observed the Sardinian Starling (*Sturnus unicolor*).

I saw a pretty sight once at Corfu, occasioned by a small Hawk (probably a cock Sparrow-Hawk) capturing a Starling out of a large flock of about two hundred. My attention was first drawn to it by noticing them scattering and condensing in a peculiar manner, when suddenly down came the fierce little bird on them. The Starlings closed together till they assumed the form of a black ball, and I believe the whole flock could have been covered by a sheet; the Hawk missed his quarry, and rose again. On this the flock spread out, and tried hard to reach a clump of olive-trees; but their active assailant was too much for them, and after several swoops he trussed one and skimmed triumphantly down wind with it.

15. GREATER GREY SHRIKE. (*Lanius meridionalis.*)

I only observed one of these birds; it occurred in Greece, and was shot by my companion.

16. MASKED SHRIKE. (*Lanius personatus.*)

Common in Syria in autumn.

17. WOODCHAT-SHRIKE. (*Lanius rufus.*)

Common in Malta and Corfu. In the former place its favourite station is on or near the top of a carob-tree, whence it continually takes short flights in pursuit of insects. They are brave and affectionate little birds. On one occasion I shot a hen, which fell about fifty yards from the tree: the cock accompanied her fall, and sat chattering defiance at me from an adjoining rail as I went to pick up his wife's dead body.

18. Spotted Flycatcher. (*Muscicapa grisola.*)
Common in Malta and Corfu during the summer months.

19. White-collared Flycatcher. (*Muscicapa albicollis.*)
Same remarks apply to this as to the Spotted one.

20. Blackbird and Common Thrush. (*Turdus merula* et *Turdus musicus.*)
Rhodes, Greece, and Ionian Islands. These birds are not very plentiful in summer; but in winter they are in the greatest abundance: so I suppose that the numbers are increased by migrants from more northern climes.

21. Rock-Thrush. (*Turdus saxatilis.*)
Common in Malta in the spring.

22. Blue Thrush. (*Turdus cyaneus.*)
This beautiful songster is common in Malta and the rocky caves and recesses of Greece. They are used as cage-birds about the Mediterranean, and become very affectionate when tame. The voice is deeper than that of *T. musicus*, but more chattering, and not so varied and sustained. Four or five pounds is a common price to give for them, when good.

The interpretation of the native name for them is the "Bird of God." There is also a tradition that this is the "Sparrow" of Scripture, "that sitteth on the house-top."

23. Golden Oriole. (*Oriolus galbula.*)
During the summer this beautiful and essentially Mediterranean bird meets the eye of the ornithologist round the whole of the northern coast. Migrating from Africa about the middle of April, they spread through the deep olive-woods of Corfu, the dark carob-trees of Malta, and the thick bay and myrtle covers of Albania and Greece. They are shy and retiring birds, and generally appear like a golden gleam as they dart through the dark-green foliage; but by sitting perfectly still I have been enabled to watch their graceful motions for half an hour within five or ten yards of me.

24. Black Redstart. (*Sylvia tithys.*)
Rather rare. I have observed them in Malta.

25. Nightingale. (*Sylvia luscinia.*)
Common in Malta in April, as it passes through on its northerly migration. I saw several of them, on the 10th of that month, that were singing beautifully.

26. Robin Redbreast. (*Sylvia rubecula.*)
Santa Maura and Greece. More plentiful during the winter than the summer.

This bird is, I believe, not supposed to migrate. If this be the case, how is it that they are so frequently met with at sea—just in the migratory season too?

27. Garden Warbler. (*Sylvia hortensis.*)
Malta and Corfu, during the spring. It is almost needless to remark, that this bird and the *Beccafico* of the Italians are one and the same; but in the Mediterranean the native shooters call lots of small Warblers, &c., *Beccafiqui.*

28. Sardinian Warbler. (*Sylvia melanocephala.*)
Plentiful in Corfu during the spring. I have also noticed it as common all round the north shore during the winter, where it is generally to be seen in the low stunted bushes on the plain, and by the side of the dry watercourses.

29. Spectacled Warbler. (*Sylvia conspicillata.*)
Corfu and Malta (where it breeds) during the spring and summer.

30. Wood Wren. (*Sylvia sibilatrix.*)
Pretty plentiful in Malta during spring.

31. Olivaceous Warbler. (*Sylvia elaica.*)
In August I shot a specimen of this bird in the olive-gardens about Jaffa. Graf v. Mühle says it is plentiful in the olive-gardens of Greece. I never observed it there.

32. Cetti's Warbler. (*Sylvia cetti.*)
I shot one of these birds (the only one I ever saw) as he was hopping about the high reeds on the border of the Butrinto river.

33. Wren. (*Troglodytes europæus.*)

Pretty plentiful in Santa Maura.

34. Wheatear. (*Saxicola œnanthe.*)

Mountains of Lebanon, Greece, Rhodes, Candia, in fact, on all the islands and shores of the Mediterranean that I have visited, this little bird is to be seen both in summer and winter. In the ardent heats of summer, they, together with the Bee-eaters, seem to enjoy the hottest rays of the sun on the most barren places, when every other bird is in the shade.

35. Russet Wheatear. (*Saxicola stapazina.*)

This bird is not nearly so plentiful as the common Wheatear; only one specimen ever came under my observation, and that one flew on board the ship at sea, on its southerly migration in the middle of September.

36. Whin-Chat. (*Saxicola rubetra.*)

Corfu and Albania; plentiful.

37. White Wagtail. (*Motacilla alba.*)

Inhabits the north coast throughout the winter, as I have captured either this form or the variety *M. yarrelli* on December 28th, in Greece.

38. Black-headed Yellow Wagtail. (*Motacilla melanocephala.*)

Pretty common about Butrinto in May.

39. Meadow Pipit. (*Anthus pratensis.*)

Pretty common at Malta and Butrinto.

40. Red-throated Pipit. (*Anthus cervinus.*)

Malta, and common on the plain of Butrinto. The red varies a great deal on the breasts of these birds. Is it known how it is distributed in the various sexes, &c.? for I have not been able to find it accounted for in any books. I have seen six Pipits ranged in a row; at one end a distinct *Anthus arboreus,* and at the other an equally distinct *Anthus cervinus,* all the intervening ones ranging off so gradually (as regarded the red on the breast) that it was impossible to tell where the distinction commenced.

41. Tree Pipit. (*Anthus arboreus.*)

Plentiful round the north shore during the summer. All the Pipits migrate considerably, as they are met with more commonly at sea than any other species.

42. Tawny Pipit. (*Anthus rufescens.*)

I only saw one specimen shot; but I believe them to be pretty plentiful in winter on the north coast and Malta.

43. Skylark. (*Alauda arvensis.*)

Common on the northern coast.

44. Crested Lark. (*Alauda cristata.*)

This is *the* Lark of the Mediterranean as far as my experience goes. It frequents the dry plains, and from the stunted plants and bushes (where it often sits) its cry of *cheep-cheep-cheep* is constantly to be heard.

45. Short-toed Lark. (*Alauda brachydactyla.*)

Plentiful in Malta in May.

46. Great Titmouse. (*Parus major.*)

Very common at Corfu.

47. Black-headed Bunting. (*Emberiza melanocephala.*)

I observed lots of these birds in the high reeds at Butrinto; but they were very artful in dodging out of sight.

48. Common Bunting. (*Emberiza miliaria.*)

In abundance in Albania, Malta, Santa Maura, and Greece.

49. Ortolan Bunting. (*Emberiza hortulana.*)

Rather rare. I obtained one specimen in Malta in April.

50. Goldfinch. (*Fringilla carduelis.*)

Very plentiful round the northern and eastern shores of the Mediterranean, both in summer and winter; at the latter season they collect in large flocks. I have noticed them at Tyre, Sidon, Baalbec, Jerusalem, and the Mountains of Lebanon.

51. Greenfinch. (*Fringilla chloris.*)

Corfu, Santa Maura; Greece in abundance. In the winter they collect into large flocks, and frequent the plains on the north coast.

52. CHAFFINCH. (*Fringilla cœlebs.*)

The same remarks apply to this as to the preceding species, except that I never observed them in the summer months.

53. COMMON LINNET. (*Fringilla cannabina.*)

The same remarks that apply to the Chaffinch are also applicable to this bird, with the exception that I do not think they are so plentiful.

54. SPANISH SPARROW. (*Passer salicarius.*)

There are many Sparrows all over the Mediterranean shores; but the species run into one another, so that the more I have tried to find out the distinctions, so much the more have I been puzzled; but I once saw a decided *P. salicarius* shot on the Plain of Missolonghi, where it was feeding with a lot of Larks. This species seems to frequent the open plains more than our Common Sparrow.

55. CUCKOO. (*Cuculus canorus.*)

Plentiful in Malta during the spring. I have noticed them there as early as April 10th; but I never heard their note. They frequent the thick locust-bean trees; but I have often seen them in the sequestered valleys, hawking for insects near the ground.

56. MIDDLE-SPOTTED WOODPECKER. (*Picus medius.*)

The only bird of this species that ever came under my observation was shot by a companion in an olive-tree in Santa Maura. I do not think it has ever been observed in the Ionian Islands before.

57. WRYNECK. (*Yunx torquilla.*)

In Malta pretty plentiful. They arrive in that island, during their spring migrations, early in April. I have noticed them, in two separate years, on April 9th and March 30th.

58. COMMON CREEPER. (*Certhia familiaris.*)

Pretty common in the olive-woods at Corfu. This bird, together with the Great Titmouse, finds the rough bark and deep interstices of the olive-trees a congenial field for their insect-hunting.

59. HOOPOE. (*Upupa epops.*)

This is a common bird all round the shores of the Mediterranean. They migrate to Africa in the winter, leaving Europe about the middle of September, and returning early in April. I have repeatedly met them at sea during their migrations; besides which, I have remarked them as being very common in Syria, Malta, and Rhodes; in the latter place they were hawking for flies in the air.

60. Bee-eater. (*Merops apiaster.*)

This graceful bird is also common in the Mediterranean, and is certainly one of the most beautiful members of its avifauna. In the hottest days their bubbling, bell-like notes sound from far off as they float towards you, glittering like green flakes when the sun strikes the varied tints of their plumage. They are generally in flocks of about ten or twelve; and I have noticed that, after they have been in one place about half an hour, they will move off and "beat" in another locality. They leave Africa for Europe about the 10th of April.

61. Kingfisher. (*Alcedo ispida.*)

Common about the marshes and salt-water lagoons of Greece.

62. Black-and-White Kingfisher. (*Alcedo rudis.*)

I have seen some of these birds on the coast of Syria, hovering amongst the small coasting-vessels. I have also noticed a few of them on the inland rivers of that country.

63. Roller. (*Coracias garrula.*)

Like the Hoopoe, this is a common bird round the shores of the Mediterranean. I have observed it in Malta and Syria, in the latter locality in great abundance. In most accounts of the Roller's habits it is stated to be a shy bird, frequenting woods and forests; my experiences of it are exactly the reverse. I think, observations are often made on the habits of birds in the vicinity of towns or thickly populated districts, where, from being so much exposed to raids from the human species, they would naturally be more shy than in more retired and natural haunts. On the Plain of Sharon, where the distance between trees is measured by miles, I have seen Rollers in the greatest abundance, their beautiful green bodies bending the slender reeds of a swamp, apparently waiting for deluded frogs to make their appearance from the cool depths below. I could certainly have shot twenty a day, without exciting myself about them.

64. Chimney-Swallow. (*Hirundo rustica.*)
On the whole of the N.E. coast during the summer. They arrive in Malta about March 20th. I once saw a flock in Santa Maura as late as December, and I have frequently known them visit the ship at sea.

65. House-Martin. (*Hirundo urbica.*)
I have shot this bird in Corfu during the summer, when it is pretty plentiful.

66. Sand-Martin. (*Hirundo riparia.*)
Common in Malta during the migratory season.

67. Swift. (*Cypselus apus.*)
On the whole of the north-east coast during summer.

68. Common Night-Jar. (*Caprimulgus europæus.*)
Rather common in Malta, where they arrive about March 20th on their northerly migration. They roost in the locust-bean trees during the day.

69. Rock-Dove. (*Columba livia.*)
Breeds in great quantities in the cliffs of Malta and Filfola, where it is joined by many Domestic Pigeons who have reverted to their original state of wildness.

70. Turtle-Dove. (*Columba turtur.*)
A very common bird during the summer on the coasts and islands of the Mediterranean. I have seen them in Syria, Rhodes, Candia, the Ionian Islands, and Greece in abundance. In calm spring nights they fly over from Africa to Europe, arriving there towards the end of April. Indeed, there is no doubt that this is the bird mentioned by the Shulamite in Solomon's Song, when she makes her lover say, "The flowers appear on the earth; the time of the singing of birds is come, and the voice of the Turtle is heard in our land."

71. Collared Turtle-Dove. (*Columba risoria.*)
A friend saw one or two in the south of Syria; but they never came under my notice.

72. Sand-Grouse. (*Pterocles alchata.*)

On the Plain of Baalbec I sometimes flushed Sand-Grouse, and I believe the above to be the species. They skulked till they were nearly trodden on, and then rose with a cry not unlike that of the Common Partridge, generally resettling about thirty or forty yards off; but, on being flushed a second time, would fly right away over the plain. I believe that, in winter, capital shooting might be had with these birds.

73. Francolin. (*Perdix francolinus.*)

This bird I have seen in Syria in the autumn, at which time they were generally solitary or in pairs, and always in the stunted myrtle-bushes which grow round the banks of the rivers, or the humid patches of marsh which dot the plains. They were not shy, but would run along in front of me at about twenty yards' distance, sometimes for two or three minutes before they would rise. When they did at last make up their minds to fly, it was with a strong drumming flight (not unlike a Pheasant's) to the nearest bushes.

As I have already stated in the columns of 'The Field,' it is my impression that this bird is now extinct in Europe. I have shot in the most favourable localities for them on the southern part of that continent, as well as made every inquiry, but without hearing of any one who has seen the bird in life. An old sporting friend of mine, who lived a long time in Sicily, assures me that they were pretty plentiful there in his youth, but that now there are none in the island.

Dr. Bree says, that "if extinct in Europe, it will be very remarkable;" and also remarks, that "the more publicity given to the question, the sooner will it be decided." There is no doubt that the question has had plenty of publicity: it is now four months since it was first mooted—time enough for 'The Field' to permeate all civilized parts of the earth, and for answers to flow back through even slow channels; but, of all the correspondents who have so kindly ventilated the question, *not one has seen it in Europe*, and all have branched off into dissertations on its numbers in India or into other particulars, which, although valuable information, are not exactly to the point. Mr. H. Sandwith, in his numerous letters on sport near Smyrna, throws a light on the subject. He remarks, "Ephesus is not a formidable journey. I have never been there; but am told that Francolins are to be shot in the neighbourhood." He then goes on to say, "I have myself shot it in Asia Minor." Now I suppose that if Dr. Bree considers Cyprus as (ornithologically) European, he would, for similar reasons, include Asia Minor in the European boundary, as the one certainly cannot be admitted without the other. But, in the present state of human knowledge, Asia Minor ranks as part of Asia; and therefore, till we hear more of it, we must conclude that the Francolin in Europe *non est inventus**.

74. GREEK PARTRIDGE. (*Perdix græca.*)

Inhabits the mountainous parts of Greece, as well as most of the Ionian Islands. Like all the true Partridges, it is not migratory. Either this bird or a variety is common in Syria, both round Damascus and Jerusalem.

75. BARBARY PARTRIDGE. (*Perdix petrosa.*)

Brought to Malta from Africa in great quantities by the trading vessels; common on the African coast, but, as far as my experience goes, not to be found in Europe.

76. QUAIL. (*Perdix coturnix.*)

This bird has long been celebrated for its numbers and migrations across the Mediterranean: they come suddenly, and during the night, in immense flocks. Morning after morning, towards the end of April, the indefatigable Maltese *caçadores* beat through the rustling corn, but not a bird is to be seen; at last they rise some day to find them everywhere—on the bare rocks, in the bushes by the roadside, crouching beneath the cotton, or whirring out from the barley. Well do the little Maltese pointers understand their wiles, and work them up for their masters, who sometimes bag twenty or thirty brace before ten o'clock. They never breed in the island, but pass on to Europe.

77. PRATINCOLE. (*Glareola pratincola.*)

In my notes, July 28th, 1862, I find:—"Whilst boar-shooting on the Plain of Sharon, I shot some Pratincoles. There were a great many of them hawking for insects over the fields, flying at a height of about 20 feet, and continually uttering a sound between a low scream and a whistle. The stomach of one that I examined was very full of Coleopterous and other insects. I rather think that they catch as many on the ground as on the wing, for they frequently settle, and run with all the ease of a Plover."

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* See Lord Lilford's article on this subject, 'Ibis,' 1862, p. 352.—ED.

They roost on the ground, and fly late at night, their large eyes being well adapted for seeing in the dusk.

78. Great Bustard. (*Otis tarda.*)

Plentiful in large flocks on the south shore of the Gulf of Arta in the winter. They feed and sleep in the middle of the plains, and are very shy of approach. When I got within about 100 yards of them, by dint of crawling and wallowing in mud, I could see their slaty-white heads watching me; they would then run a few steps, and fly straight away. I think the idea of their running from pursuit, except when being hawked, is now pretty well exploded. I believe the foxes and jackals sometimes circumvent them, as I have often come upon their feathers and bones scattered over the plain.

79. Norfolk Plover. (*Œdicnemus crepitans.*)

Plentiful in Malta.

80. Golden Plover. (*Charadrius pluvialis.*)

I have never observed these birds in the Mediterranean during the summer. I extract the following from my notes:—"November 22nd, 1862. Hiding for Duck in the Missolonghi marshes, Grey and Golden Plover and Lapwing arriving in abundance at 11 o'clock at night, soaring and whistling over my head. This is the first time that I have noticed them in any quantities."

81. Lapwing. (*Vanellus cristatus.*)

A very common bird on the northern shores of the Mediterranean during the winter, where they arrive about the middle of November.

82. Grey Plover. (*Vanellus squatarola.*)

The same remarks apply to these as to the Golden Plover.

83. STILT. (*Himantopus melanopterus.*)

One in Malta market in March, and one that I saw a friend shoot on the edge of a salt-marsh by the Gulf of Arta, are the only two that ever came under my notice.

84. PURPLE HERON. (*Ardea purpurea.*)

85. SQUACCO HERON. (*Ardea comata.*)

86. NIGHT-HERON. (*Nycticorax gardenii.*)

I have observed a few specimens of these birds at Malta and Filfola during the migratory season.

87. GLOSSY IBIS. (*Ibis falcinellus.*)

These birds migrate through Malta in the spring, and spread themselves over the northern coast, where they frequent the marshes.

88. CURLEW. (*Numenius arquatus.*)

Common on the northern coast during the winter.

89. CURLEW SANDPIPER. (*Tringa subarquata.*)

I have shot these birds at Corfu in May: they were all more or less advanced in their summer dress.

90. LITTLE SANDPIPER. (*Tringa minuta.*)

Rather rare in the early part of December about Missolonghi.

91. SANDERLING. (*Tringa arenaria.*)

Obtained one specimen in winter plumage at Missolonghi, which was shot on a small island.

92. SPOTTED REDSHANK. (*Totanus fuscus.*)

I believe this to be a commoner species than the Common Redshank (*T. glottis*) about Missolonghi; for all the birds that I have ever shot from the large flocks that whistle over the swamps have proved to be *T. fuscus*. They have been sufficiently abused as Duck and Snipe disturbers, without my adding anything on the subject.

93. BAR-TAILED GODWIT. (*Limosa rufa.*)

On the 18th of November I shot two out of three of these birds, which were feeding on a sandspit off Missolonghi: they were not shy. I never saw any others.

94. Woodcock. (*Scolopax rusticula.*)

When the northerly winds of December begin to cover the mountain-tops with snow, on the first starlight quiet nights the Woodcocks float down from the north on "silent wing" to meet their certain doom from Greek pot-hunter or British sportsman. Should the weather be mild, or the wind come from the south, one night spirits them all away; but I am not certain whether they go high up on the hills, or take a short move back to the northward: probably the latter.

95. Snipe. (*Scolopax gallinago.*)

Arrives on the north shores about the end of November. They are very plentiful on some parts, while on others, to all appearance equally as well suited for them, not one is to be seen. I do not think we quite understand the working of the bump of locality in these birds.

96. Jack Snipe. (*Scolopax gallinula.*)

Pretty common in winter: they arrive a little earlier than the Common Snipe.

97. Water-Rail. (*Rallus aquaticus.*)

This little bird is very common, pattering along a few yards in front of the Duck- or Snipe-shooter till a convenient clump of rushes afford it a friendly shelter.

98. Little Crake. (*Rallus pusillus.*)

Rather rare: I only shot one.

99. Coot. (*Fulica atra.*)

Common.

100. Caspian Tern. (*Sterna caspia.*)

Very plentiful at Missolonghi, where hundreds may be seen at once, as they float over the lagoons, ready to pounce on small fry.

101. Herring-Gull. (*Larus argentatus.*)

The commonest Gull in the Mediterranean. On a moonlight night at Corfu I noticed about fifty Gulls feeding as calmly and unconcernedly as if it had been broad daylight. I am not aware that it has previously been remarked that they are night-feeding birds.

102. Lesser Black-backed Gull. (*Larus fuscus.*)
Pretty common.

103. Little Gull. (*Larus minutus.*)
Pretty common at Malta.

104. Cinereous Shearwater. (*Puffinus cinereus.*)
Breeds in considerable numbers in the rocks of Filfola (a small, precipitous, uninhabited island close to Malta). I have observed them at sea sitting on the water, when they are easily approached. I have also seen them disputing a shoal of small fry with some large fish.

105. Manx Shearwater. (*Puffinus anglorum.*)
Also breeds in considerable numbers in Filfola, where the fishermen catch numbers of them by simply placing nets in the interstices of the rocks where they are likely to run.

106. Wild Goose.
I have seen plenty of Wild Geese at Missolonghi and other places; but, as I never bagged any, I cannot state the species for a certainty.

107. Wild Duck. (*Anas boschas.*)
Very plentiful about Greece and Albania in the winter. I have seen them at Butrinto in the autumn. On June 5th a friend found a nest, with hard-set eggs, on the Albanian coast.

108. Teal. (*Anas crecca.*)
Plentiful in winter.

109. Wigeon. (*Anas penelope.*)
The commonest Duck in winter; but I never noticed them during the summer.

110. Pochard. (*Anas ferina.*)
Not so plentiful as the Wigeon, but still comparatively common.

111. Smew. (*Mergus albellus.*)
Pretty common.

112. Pelican. (*Pelecanus onocrotalus.*)
Pretty common about the Missolonghi marshes, where I have

seen them floating in flocks of nine or ten, with their wings elevated to catch the breeze, after the manner of Swans.

113. Common Cormorant. (*Carbo cormoranus.*)

Plentiful in the Mediterranean. On the morning of December 6th, when Duck-shooting at Petala, on the coast of Greece, I was astonished to see a large flock of these birds, I should think not less than 2000 in number, pass close over my head as I lay concealed, and fly away to the south-east. I watched them till the wavy lines looked like a patch of lace against the hues of the morning sky, when they disappeared over the hills.

I conclude my notes with a list of birds I have observed at sea:—

Birds.	N. or S. migration.	Direction of Wind.	Distance and name of nearest land.	Date.
Meadow-Pipit	North	E. by S.	Sardinia 85′	April 19
Red-legged Falcon	North	Easterly	Malta 32′	May 8
Wood-Wren.........	North	S.E.	Sardinia 21′	April 21
Redstart	North	S.S.E.	Sardinia 10′	April 17
Two Pipits	North	E. by S.	Sardinia 85′	April 19
Greenfinch	North	N.W.	Sardinia 20′	April 12
Robin	North	N.-westerly	Sardinia 30′	April 11
Snipe	North	Calm	Malta 10′	May 9
Turtle-Dove.........	North	W.	Greece 135′	May 25
White-collared Fly-catcher............	North	Calm	Sardinia 50′	April 20
Goat-sucker.........	North	N.N.W.	Greece 12′	May 27
Sand-Martin	North	W.	Nearest land 110′	May 25
Hen Thrush.........	South	N.W.	Zante 105′	Oct. 10
Two Robins.........	South	N.-westerly	Zante 105′	Oct. 1
Hen Robin	South	N. by E.	Sicily 55′	Sept. 12
Yellow Wagtail ...	South	W.	Cyprus 50′	Aug. 27
Short-eared Owl ...	South	N.W. by W.	Zante 100′	Oct. 16
Sparrow-Hawk ...	South	N.W.	Corfu 100′	Oct. 16
Hoopoe	South	S.W.	Syria 25′	Aug. 25
Turtle-Doves	South	S.E.	Malta 240′	Sept. 15
Storks	South	W.	Candia 25′	Sept. 11

I need not say that this is but a very small part of the number of birds that I have seen; but these are enough to illustrate the general principle on which I have observed them to travel. The nearest land put down is very often not the land that they have departed from. For instance, the Turtle-Dove going to the north, with Greece 135 miles off, had evidently come from Africa —a much longer distance.

XXII.—*Appendix to List of Birds observed in the Islands of Malta and Gozo*[*]. By CHARLES A. WRIGHT.

To my previous list I have two new species to add, namely:—

LANIUS COLLURIO. (Red-backed Shrike.)

Some years ago, I purchased in the Malta market a bird which appeared to be a female (young) of this species. This was in the autumn. The specimen was in a too advanced state of decomposition to be preserved; and not being quite certain of the species, I did not feel justified at the time in admitting it into the list. Since then I have seen an undoubted example, which had been killed in Malta, in the collection of Signor Schembri, who had obtained it after the publication of his Catalogue in 1843. This bird may therefore be considered as an accidental visitant. It is very common in autumn in the neighbourhood of Athens, whence I have received specimens.

FULIGULA MERSA. (White-headed Duck.)

A specimen of this interesting Duck came into my possession in January last, soon after the issue of the first part of this list. It was a female, and was shot during the extraordinarily bad weather which prevailed about the middle of the month. I have never heard of its having been met with here before. At the same time a good many Ducks of various kinds, and Teal, were driven on the island by the severity of the weather; and amongst them a number of *Mergus albellus* (an exceedingly rare bird in Malta), of which I obtained an adult female and several young birds, also females. Male Smews seem to be universally scarce. The White-headed Duck may be readily distinguished from other Ducks by its shining, Grebe-like breast, very short wings, and stiff, almost Cormorant-like tail. Its gibbous bill, which is especially observable in the male, is also a remarkable feature. As it is said to be common in some parts of the northern coast of Africa[†], as well as Sicily and Corfu, it is curious that we do not oftener have it here.

Besides these novelties, I have registered the following occurrences of rare and accidental visitors in my note-book since my list went to press:—

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[*] See *anteà*, p. 137.

[†] It is common on the lagoon of El Baheira, near Tunis.—ED.

Strix otus.—A third specimen of this common European Owl, but which appears to be only an accidental visitor to Malta, was taken on the 17th December last, and is now in my possession.

Passer petronia.—Another example of this species, which, I am informed, is very common in Naples, where it is taken in nets in great numbers, and migrates in spring and autumn, was captured alive in February this year (1864), and is in the possession of Dr. Gulia.

Emberiza cirlus.—I obtained another example, taken alive in 1863.

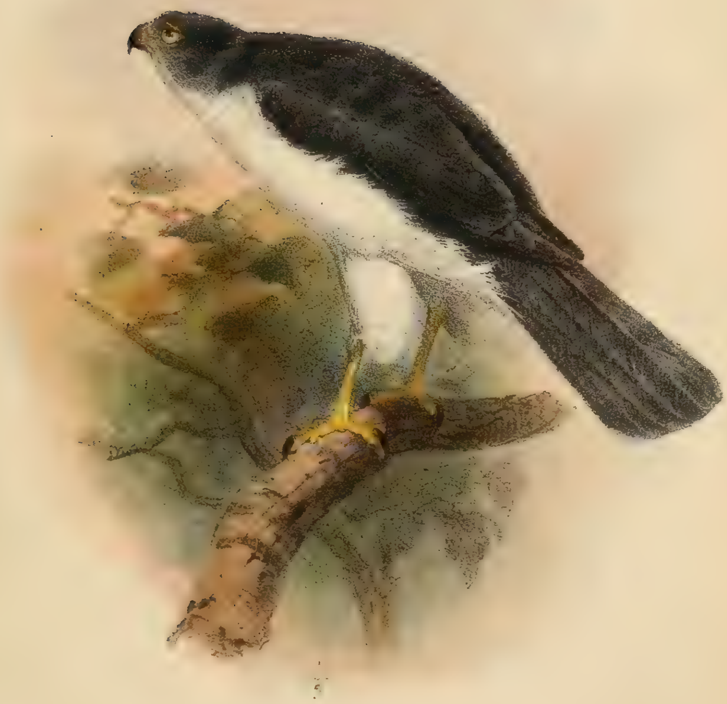
Hirundo rupestris.—This Swallow appears to be less given to roaming than any of its congeners, and it has even been doubted whether it is a migrant at all. It may perhaps be for this reason that we seldom see it here, whilst the other species, *H. rustica* and *H. urbica*, are plentiful during the migratory seasons. My first acquaintance with *H. rupestris* in these islands was in December last, when spending a day in Gozo. There were several of them flying over the town and along the fronts of the houses in the streets, and round the ditch of the old fortifications, which is used as a fruit- and vegetable-garden. The day was cold, but clear. On revisiting the island about a month afterwards, on the 26th January, I again met with them the first thing on landing. On neither occasion was any other species to be seen, nor do any of the Swallows or Swifts generally winter here. Again, at the interval of about another month (on the 20th of February), I observed a specimen in the Malta market. All this serves to prove the sedentary tendency of the *H. rupestris*; but that it does sometimes migrate there can be no doubt.

XXIII.—*On the Birds of the Comoro Islands.*

By P. L. Sclater, M.A., Ph.D., F.R.S., &c.

(Plate VII.)

The Comoros are a group of four islands lying in the northern part of the Mozambique Channel, between Madagascar and the



J Wolf del. et lith. M & N Hanhart imp.

ACCIPITER FRANCESI

opposite coast of Africa. They are all of volcanic origin, and probably of quite recent formation; but only one of them (Great Comoro) is now an active volcano, the other three (Mohilla, Joanna or Anjuan, and Mayotte) being in a quiescent state.

The great western current from the Indian Ocean which sets round Cape Ambro, at the northern termination of Madagascar, impinges with full force on the Comoros, and then passes down the Mozambique Channel at a rate of ninety miles a day in some parts, but varying according to the strength of the prevalent monsoon. It thus appears to have come about that the Comoros have been peopled with life from Madagascar, and that but very few African forms have as yet reached them. The vegetation of the Comoros is, as I am informed by Dr. John Kirk, entirely that of Madagascar, but with an admixture of Indian weeds, such as are found in the Mascarene Islands and in other spots subject to the eastern monsoon. The only exception noted by Dr. Kirk to the Madagascarian facies of vegetation was in the case of a species of *Clematis*. Of this genus an African species was common in the Comoros, and the corresponding Madagascarian species was not noted there.

In the fauna of the Comoros, as far as we are acquainted with it, the same is the case as with the flora. The mammals are few in number, but those found are all of Madagascarian origin. The *Lemuridæ* are represented by a single species, the *Lemur anjuanensis*. Dr. Peters records the existence of this animal in Joanna (whence it has derived its name); and Dr. Kirk tells me he also met with it in the same island, in the forests, at about 2500 feet above the sea-level. Several specimens of a *Centetes* (probably *C. ecaudatus*) were also obtained by Dr. Kirk in Joanna; and according to native testimony, as Dr. Kirk informs me, the *Centetes* also occurs in Mohilla. The only other species of mammal I can record from the Comoros is *Pteropus edwardsii*, which was obtained by Dr. Peters* and by Capt. Speke† in Joanna. All these three species are strictly Madagascarian and not African forms. With regard to birds, as we shall see further on, nearly the whole of the recorded species are Madagascarian. Reptiles, Dr. Kirk tells me, are almost unknown in the Comoros.

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* Zool. Reise, i. p. 23.

† See P. Z. S. 1861, p. 268.

A large Crocodile (perhaps *Crocodilus vulgaris**) was recently cast ashore at Joanna, but destroyed by the natives before it had reached the marshes.

I will now proceed to say a few words on each of the four islands, borrowing my remarks nearly entirely from some notes kindly prepared for me by Dr. Kirk :—

"GRAND COMORO is the largest island of the group, the nearest to Africa, and the most northern. In 1858 it was an active volcano; and a stream of lava, which flowed from the eastern side, covered a rich valley, and passed into the sea, where it altered the outline of one of the harbours. On this island there is not much cultivated land, the volcano, a rounded peak probably 8000 feet high, rising directly from the shore. Unlike the other islands, Grand Comoro is bare, and, seen from a few miles' distance, appears destitute of the damp forest which clothes Joanna. Grand Comoro has not been visited by naturalists, and of its productions nothing whatever is known. The inhabitants are said to be constantly at war with one another, and inhospitable to strangers; they seem to be of more purely African blood, and to have less admixture of Arabic race, than those of the others of the group. As servants they are much esteemed at Zanzibar, and their language and features are those of the common people of the other islands, who are by no means either fierce or warlike. Their language is very nearly allied to the 'Makoa' dialect of the continent of Africa, which belongs to the system of South-Equatorial African languages. The introduction of Hova blood from Madagascar is of very recent occurrence in Grand Comoro, and has not yet in any respect modified the people.

"The next island of MOHILLA is the smallest of the group. As in the others, its rocks are formed of a volcanic lava, more or less spongy or compact. There are several good flat pieces of land on the island, suitable for the growth of cane; but the people are in a degraded state, with a dominant aristocracy of emigrant Malagasies, who have converted the island into an entrepôt for the slave-trade. Cocoa-nuts and rice are cultivated, and the hill-slopes afford timber of considerable size; but there does not exist the damp primeval forest which clothes Joanna. The main peak of Mohilla is only about 4000 feet high, and therefore catches very little moisture. A few birds were obtained while we touched at this island, and a considerable number of plants. The Mammalia spoken of by the people were the *Centetes,* called by the same name as in Joanna, 'Landa,' and a large frugivorous Bat. The latter was extremely common, during the day hanging in dark masses on the branches of shaded trees. Their food was principally wild figs and the fruit of the *Vitex*. Their flesh is extremely good, tender, and well-flavoured. Pigeons of several sorts were seen; and a dark Parrot (*Coracopsis comorensis*), Bee-eaters (*Merops superciliosus*), and a small Kingfisher were met with in the belt of vegetation along the coast."

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* This species was recently received by the Zoological Society from Madagascar.

Such are Dr. Kirk's notes on Mohilla. I am not aware that any other naturalist has ever visited the island. The species of birds obtained by Dr. Kirk during his short stay were four, namely—

Hypsipetes ourovang.	*Foudia madagascariensis.*
Bernieria madagascariensis.	*Merops superciliosus.*

JOANNA, or ANJUAN, the third island of the Comoros, is the one with which we are best acquainted. Dr. W. Peters, of Berlin, made a short stay here during his residence in Mozambique; and, although the second volume of the 'Zoologische Reise,' treating of the birds, is not yet published, Dr. Peters's kindness in sending me a written notice of the species obtained there has enabled me to introduce them into my list.

Dr. Kirk, who also visited Joanna on several occasions during his service with the recent Zambesi expedition, gives me the following notes on this island:—

"Joanna seems to be the most humid of the Comoro group. A ridge of high land, rising in places to 6000 feet above the sea-level, extends all through the island, with passes, however, across it not exceeding 3000 feet. The slopes of this range are intersected by deep ravines, and it is by no means possible to pass at will from one ridge to another. The rocks are precipitous, and overgrown with a tangled mesh of vegetation, covering deep cracks and fissures. Higher up a dense forest of great trees, hung with ferns and lycopodiums, clothes the hills. The soil consists of damp, decaying vegetation, the shade being too damp to allow of grass. These are the haunts of the *Lemur anjuanensis,* which may be found in pairs, of a cold morning, rolled up in a ball, perched on some branch. The Parrot peculiar to these islands and a large, plump, solitary Pigeon are also found in these forests. The latter is a fine bird, making a good appearance on the table. The *Centetes* runs about among the rotten branches in search of insects. The *Centetes* is strictly a nocturnal animal; but in the daytime, with the assistance of a dog, may be found easily, as it hides under a leaf or a log of wood. Sometimes, when started, it makes off with a number of young ones in a line after it. It is not at all fierce, but, when caught old, is rather dangerous, giving a nasty wound with its long tusks. The young ones, however, soon become quiet, and, on board ship, are extremely useful, devouring at night great numbers of cockroaches, and remaining concealed during the day. Both old and young *Centetes,* however, eat fruit as well as insects, and are very fond of flesh. Mr. W. Sunley, H. B. M. Consul for the islands (resident at Joanna, where he owns a large sugar-estate), informed me that some carnivorous animal exists on the island. While Dr. Dickinson lived there, one was obtained for him; but, being allowed to get loose, it killed in one night several of his fowls. A Rat, with a musky odour, is also a great annoyance in Joanna, tainting wine, sugar, and anything it may pass over. In the rivers of Joanna are four or more species of fish, which offer sport to the angler; but the streams are small. In the marshes an Eel is found, differing from the species in the streams. In the forest and near the sides of the mountain-torrents a large Land-Crab is said to exist, but to be rare. A *Cyclostoma* picked up proved to be of the division peculiar to the Mascarene Islands, Madagascar, and the Seychelles.

"A small hill-tarn, 2000 feet above the sea, named Zalanza, the head of one of the ravines shut off by a transverse dyke, contains a bird and fish reputed to be sacred. The people (not the Arab portion) annually make a visit to the lake, and certain rites are performed. It is difficult to get them to conduct strangers thither, and such persons are commonly made to leave their arms behind before descending to the water. The people speak in an under tone when looking at the lake; and upon the occasion of our visit a small earthenware altar, on which incense had been burned, was seen under an old tree. Our desire to visit the spot arose from stories regarding the sacred bird, which was stated to be wingless. Once there, we stuck to our guns, and were successful in deciding that the wingless bird was no other than a small Dabchick (*Podiceps*, sp.), very like the one found on the mainland near Mozambique. The fish we did not see; and being unprovided with rod and line, we left the second divinity for future explorers to investigate. On the lake were seen also several Ducks, but none were obtained."

Dr. Kirk did not obtain any specimens of birds in Joanna; but the late Dr. John Dickinson (whose name he introduces, and who remained several weeks in Joanna in 1861 whilst on his route to join the Central African Mission party on the Shiré) collected assiduously during his stay; and it is mainly upon Dr. Dickinson's collections, which have been kindly submitted to my examination by his brother, Mr. R. Dickinson, of Jarrow-upon-Tyne, that I have been able to construct the following list of birds of the Comoro Islands group.

Mayotte, the last of the Comoros, and nearest Madagascar, is in the possession of the French. I believe that a few birds have been obtained in this island by some of the French naturalists who have visited Madagascar; but I can mention none of them, except *Tchitrea pretiosa*, which is recorded as from that locality by Lesson.

From these various sources it appears, as will be seen by the following list, that we are at present acquainted with twenty-three species of birds from the Comoro Islands. Of these two only (*Falco minor* and *Turtur semitorquatus*) are African species that have not as yet been found in Madagascar, the *Numida* remaining doubtful; and two (*Nectarinia comorensis* and *Coracopsis comorensis*) are, as far as we know, peculiar to the Comoro group. *Coracopsis*, however, is a genus peculiar to Madagascar, and the species is not, in my opinion, a very distinct one. So, on the whole, we must consider the Comoros, as regards their ornithology, as purely Madagascarian.

Order ACCIPITRES.

1. Falco minor, Bp. Rev. de Zool. 1850, p. 484: Gurney, Ibis, 1861, p. 131.

One example of this Falcon was procured by the late Dr. Dickinson in Joanna. He notes the "eye" as "very dark blue." The bird has not yet been recorded from Madagascar, but is a South-African species which occurs in Natal, as noticed by Mr. Gurney, *l. c.*

2. Accipiter francesi, A. Smith: Hartl. Orn. Mad. p. 20. (Pl. VII.)

Two examples, apparently a pair, of this pretty little Hawk were obtained on Joanna by the late Dr. Dickinson. As the species is rather rare in collections, and has never yet been figured, Mr. Wolf's accompanying drawing of it, for which we are indebted to the liberality of Mr. J. H. Gurney, will probably be acceptable. The following are the dimensions of Dr. Dickinson's specimens, which are alike in plumage:—

	Long. tota,	alæ,	caudæ,	tarsi.
Presumed male	10·0	5·5	4·5	1·8
,, female ...	10·5	6·2	5·0	2·0

The bird is well described by Dr. Hartlaub, *l. c.*

3. Circus maillardi, Verreaux; Ibis, 1863, pl. 4. p. 163. *C. melanoleucus*, Hartl. *l. c.* p. 21.

An adult male of this Harrier is in Dr. Dickinson's collection from Joanna Island, and is of much interest as confirming my former opinion as to the distinctness of this species.

4. Milvus ægyptius, Gm. *Milvus parasiticus*, Hartl. *l. c.* p. 19.

One example of this Kite is in Dr. Dickinson's collection from Joanna. It was also observed, on one occasion in great abundance, by Dr. Kirk on the sea-coast of the same island, near Pomone, in the month of August.

Order PASSERES.

5. Hypsipetes ourovang (Gm.): Hartl. *l. c.* p. 44.

Mohilla (*Kirk*). One example, "shot in the forest near the foot of the hills near Oane, in the month of February."

6. **Bernieria madagascariensis** (Gm.): Hartl. *l. c.* p. 53.

Mohilla (*Kirk*). "Shot in the same place as the *Hypsipetes*."

7. **Dicrurus forficatus** (Linn.): Hartl. *l. c.* p. 49. *Dicrurus*, sp., Sclater, P. Z. S. 1861, p. 268.

Joanna (*Dickinson*). Dr. Kirk tells me this Drongo is "common in the open spaces of the forest above Pomone, in Joanna." It is a very common bird in Madagascar.

8. **Muscipeta pretiosa** (Less.). *Tchitrea pretiosa*, Less. Descr. Mamm. et Ois. p. 324; Hartl. *l. c.* p. 46.

Mayotte (*Lesson*). I am not acquainted with this species. Capt. Speke (as I have mentioned, P. Z. S. 1861, p. 268) brought two birds in spirits from Joanna, when he touched there on his way up to Zanzibar from the Cape, one of which was of this genus.

9. **Nectarinia comorensis**, Peters, sp. nov.

N. capite colloque splendide viridibus: fascia pectorali ferrugineo-rufa: macula pectorali laterali aurantiaca: abdomine alisque fusco-nigris: cauda anthracina, rostro et pedibus nigris.

Long. tota 0·120, alæ 0·060, caudæ 0·040, rostri 0·020, tarsi 0·019 mill.

Hab. Joanna Island (*Peters*).

Dr. Peters has kindly communicated to me the characters of this new species of *Nectarinia*, which he discovered during his short stay in Joanna.

10. **Foudia madagascariensis** (Linn.): Hartl. *l. c.* p. 55.

Mohilla (*Kirk*). "Obtained in a reedy marsh near Oane."

Order FISSIROSTRES.

11. **Leptosomus discolor** (Herm.). *Leptosomus afer*, Hartl. *l. c.* p. 63.

One example of this very curious bird was obtained in Joanna by Dr. Dickinson. It is certainly more nearly allied to the Rollers (*Coraciidæ*) than to the Cuckoos (*Cuculidæ*), with which it is generally placed.

12. **Merops superciliosus**, Linn.: Hartl. *l. c.* p. 31.

Mohilla Island (*Kirk*). From the sugar-plantations near Oane; seen flying about in small numbers.

Order SCANSORES.

13. Coracopsis comorensis, Peters, Monatsb. Berl. Acad. 1854, p. 371: Hartl. *l. c.* p. 59.

Dr. Peters discovered this species in Joanna. One example of it was obtained in the same island by Mr. C. Livingstone, and presented to the British Museum. Dr. Kirk observed it, when in Mr. Livingstone's company, on the western slope of the hills in Joanna Island, above Pomone, in the thick forest. It did not appear to be very common.

Order COLUMBÆ.

14. Alectrœnas sganzini (Verreaux). *Funingus sganzini,* Bp. Consp. ii. p. 29: Hartl. *l. c.* p. 64.

An imperfect skin of Dr. Dickinson's, from Joanna, is apparently referable to this species. It is well described by Bonaparte, *l. c.*, as "Similis *A. pulcherrimæ,* sed pileo haud rubro et absque carunculis." There is a better specimen from the same locality in the British Museum.

Dr. Kirk informs me that this Pigeon is very common in Joanna. He met with it in abundance in the forest, up to about 1000 feet elevation, and thence to the base of the hills. Dr. Kirk likewise found two other species of *Columbidæ* in the same forest, of which no specimens were obtained.

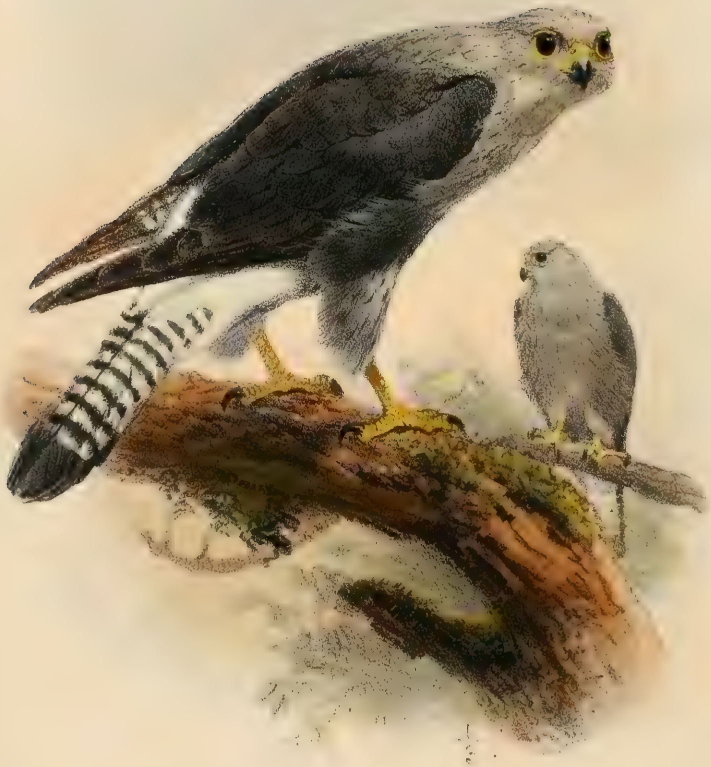
15. Turtur semitorquatus, Sw.: Bp. Consp. ii. p. 64.

Two examples of this Turtle, from Joanna, are in Dr. Dickinson's collection. It is a common and well-known species on the opposite coast of Eastern Africa, but, so far as I am aware, has not yet been met with in Madagascar.

Order GALLINÆ.

16. Numida mitrata, Licht.?

A Guinea-fowl is found wild in the forest on the east side of Joanna, where it was observed by Dr. Kirk. The specimens obtained were devoted to the table; but Dr. Kirk considers them not to have been different from the ordinary continental *Numida mitrata.* The Madagascar form, *N. tiarata,* is so similar



Wolf del. et lith.

M & N Hanhart Imp.

FALCO DICKINSONI.

(*quære*, are they really distinct ?), that it is just as likely to have been the latter species.

Dr. Peters also obtained specimens of a species of *Numida* in Joanna.

Order GRALLÆ.

17. Ardea comata, Pallas : Hartl. *l. c.* p. 74.

Joanna (*Dickinson*). Dr. Kirk reports this Heron to be common in the marshes on the sea-coast near Pomone.

18. Charadrius, sp.

19. Charadrius, sp.

Dr. Peters obtained two species of Plovers at Joanna, probably two of the species indicated by Hartlaub, *l. c.* p. 72.

20. Strepsilas interpres, Linn. : Hartl. *l. c.* p. 73.

Joanna (*Peters*).

21. Tringoides hypoleucus (Linn.) : Hartl. *l. c.* p. 77.

One example. Joanna (*Dickinson*).

Order NATATORES.

22. Podiceps, sp. ?

Dr. Kirk met with a small Grebe in Lake Zalanza, in Joanna, a small hill-tarn 2000 feet above the sea-level. It is quite unknown elsewhere in the island. The natives of Joanna go every year at certain times to worship it, and burn incense to it on an altar. A large *fish* shares with it the divine honours. Dr. Kirk noted Ducks (*Dendrocygna viduata* ?) in the same spot. (See his notes, *anteà*, p. 296.)

23. Prion banksii, Smith, Ill. S. Afr. Zool. pl. 55.

One example from Joanna (*Dickinson*). Dr. Kirk tells me this Petrel is common in the Mozambique Channel.

XXIV.—*On the Rapacious Birds collected by the late* Dr. Dickinson *in the Zambesi Region.* By P. L. Sclater, M.A., Ph.D., F.R.S., &c.

(Plate VII.)

A series of skins of rapacious birds, collected by the late Dr. John Dickinson on the Zambesi and its affluents, having been submitted to my examination by his brother, Mr. R. Dickinson, I have had great pleasure in determining the species—a task in which, however, I should mention, I have received much assistance from Mr. J. H. Gurney's extensive knowledge of this group of birds.

The late Dr. Dickinson was surgeon to the Oxford and Cambridge Central-African Mission under the late Bishop Mackenzie.

Dr. Dickinson commenced his collection of birds at Quilimane, on the coast, where he was waiting, for some time, for an opportunity to proceed up the river, in September 1861. Here he obtained about fifteen specimens. Upon reaching Magomero—the mission-station in the Mananja Mountains—at an elevation of some 3000 feet above the sea-level, about two months later, he appears to have again resumed his collections, the eighteen next succeeding birds being registered as from this locality.

Upon the mission-station being abandoned in April 1862, Dr. Dickinson accompanied the other members of the party in their retreat to Chibisa, the highest point of the navigation of the Shiré. The rest of Dr. Dickinson's collection, numbering some eighty specimens, were obtained at this locality, where he continued to reside until his death, which took place on the 17th of March, 1863.

Dr. Kirk informs me that the late Dr. Dickinson was hard worked by his professional engagements during the whole of the time he spent on the Zambesi, and was, moreover, continually laid up by fever. In addition to this, he was much attached to the study of *Diatomaceæ*, and made a considerable collection of these objects. Under these circumstances, it is only to be wondered that he was enabled to turn his attention to ornithology so far as to amass the present collection, which embraces a very fine series of Raptorial birds, numbering forty-eight specimens, besides examples belonging to other groups. With regard to the latter, they are mainly duplicates of the series obtained by Dr. Kirk during the Zambesi expedition. I have not thought it necessary, therefore, to register their names, as Dr. Kirk is preparing notes upon his own collections, and has undertaken to insert in his list some few species that are in Dr. Dickinson's series, but not in his own.

Dr. Dickinson's collection contains examples of seventeen species of *Falconidæ* and five of *Strigidæ.* To render the list of Zambesian Accipitres as complete as possible, I may mention that Dr. Kirk's collection contains, besides Accipitres, examples of the following species, which are not in Dr. Dickinson's collection:—

Haliaëtus vocifer (Daud.).
Circus ranivorus (Daud.).
Erythropus vespertinus (Linn.).
Scotopelia peli, Bp.
Athene capensis, Smith.

Also, that though neither Dr. Kirk nor Dr. Dickinson obtained any specimens of the family Vulturidæ, it is certain that there are at least three or four species of this family to be found there; namely, *Vultur auricularis, Neophron percnopterus, N. pileatus, Gyps fulvus,* and probably *Vultur occipitalis* and *Gyps rueppellii.*

In the following list, where the contrary is not stated, I have used the nomenclature and arrangement of Mr. G. R. Gray's List of the specimens of Accipitres in the British Museum.

1. AQUILA PENNATA (Gm.).

Chibisa. One example. "Iris vandyke-brown; cere and toes lemon."

2. SPIZAËTUS OCCIPITALIS (Daud.).

Two examples. Magomero and Chibisa. "Iris bright yellow; cere pale yellow; bill bluish, tip black; toes light yellow, claws black."

3. SPIZAËTUS SPILOGASTER, DuBus.

"*Spizaëtus spilogaster,* DuBus.," Bp. Rev. Zool. 1850, p. 487. *Spizaëtus zonurus,* Müller, Naum. 1851, pt. iv. p. 27, et Ois. d'Afr. pl. 1. *Spizaëtus ayresii,* Gurney, Ibis, 1862, p. 149. pl. 4. *Spizaëtus leucostigma,* Heuglin, Sitz. Acad. Wien, xix. p. 259 (descr. nulla).

Three examples:—

a. (adult ♂.) Edge of eyelids black; cere yellowish olive;

bill slate-blue, black at tip; iris orange; toes light yellow; claws black. Magomero.

b. (imm. ♀.) Iris light brown; cere and toes light lemon. Chibisa.

c. (juv. ♀.) Cere, angles of mouth, and toes light lemon. Chibisa.

This very interesting series shows that Mr. Gurney's *Spizaëtus ayresii*, described and figured in the 'Ibis' for 1862, is the immature form of *Spizaëtus spilogaster*, of which the adult is sufficiently accurately figured by the Baron v. Müller, *l. c.* Mr. Wolf's plate in the 'Ibis' represents the immature plumage in nearly every respect, except that Dr. Dickinson's specimens show still less signs of a crest than are depicted in the plate of *Spizaëtus ayresii*, and the still younger bird has the under surface uniform brown, with scarcely a single indication of spots.

In the youngest specimens the under plumage is nearly uniform rich fulvous. In the next stage the spots begin to appear, and the under surface becomes white, densely spotted with black spots, the tail being also strongly barred across. In the perfectly adult the spots wear off, and the bird becomes white beneath, with spots only on the breast and flanks. In this plumage the tail has a broad subterminal black bar.

4. Circaëtus thoracicus, Cuv.

One example. "Iris yellow; cere very dirty cream-colour." Chibisa.

5. Circaëtus zonurus, P. von Würtemberg; Heuglin, Ibis, 1860, pl. 15. p. 410.

Three examples:—

a. "Iris yellowish brown." Magomero.

b. "Iris cream-colour." Chibisa.

c. "Iris cream-colour." Chibisa.

This rare species of *Circaëtus* is figured in the 'Ibis,' as above quoted, from v. Heuglin's drawing, with sufficient accuracy to render it easily recognizable. M. Jules Verreaux's remarks on the same bird (Ibis, 1862, p. 210) should also be referred to.

6. Pandion haliaëtus (Linn.).

One example. "Iris yellow." Chibisa.

7. Helotarsus ecaudatus (Daud.).

One young example, without label attached.

8. Milvus ægyptius (Gm.).

Two examples. "Iris brown; legs and toes chrome; cere dark cream-colour." Quilimane and Chibisa.

9. Elanus melanopterus (Daud.).

Three examples. "Iris deep vermilion; legs, toes, and cere yellow ochre."

10. Falco dickinsonii, Sclater, P. Z. S. 1864, May 24th.

♂. Cineraceo-niger; capite undique pallide cinereo, hujus plumis medialiter nigro striolatis: uropygio albicante, cinereo tincto: cauda albicanti-cinerea, nigro frequenter transvittata, fascia subterminali late nigra, apicibus ipsis cinereo-albicantibus: ventre nigricante brunneo tincto, tibiis et crisso dilutioribus, cinerascentibus: alarum pogoniis internis albis, nigro frequenter transvittatis: rostro nigro, cera et pedibus flavis: remigibus 2^{do} et 3^{tio} æqualibus et longissimis: cauda rotundata. Long. tota 13·5, alæ 8·2, caudæ 5·2, tarsi 1·4 poll. et dec. Angl.

♀. Mari similis sed major, abdomine brunnescentiore. Long. tota 14·5, alæ 9·1, caudæ 6·0, tarsi 1·5.

Hab. In ripis fl. Shiré in Africa orientali.

Dr. Dickinson's series contains three examples of this very interesting bird, all obtained at Chibisa, on the Shiré. The two first are thus noted:—"Pair of light-grey-headed Hawks, male and female: iris dark brown; cere, legs, and toes yellow ochre." The third is referred to as the same as the preceding, and is a female.

This new species, which I have proposed to call after the name of its lamented discoverer, is a close ally, as regards structure, of *Falco ardesiacus*, Vieillot, of Western Africa. It is, however, readily distinguishable by its brighter head, white rump, and altogether more strongly marked plumage, and is a very easily recognizable species. Mr. George Gray, who has received for the British Museum a specimen of the same bird collected by Dr. Kirk during the Zambesi expedition, was inclined to think it might be the *Falco zoniventris*, Peters, Monatsb. Berl. Acad. 1854, p. 7; but I do not think this is likely, as neither Dr. Peters's short characters nor the more detailed description given by Dr. Hartlaub[*] will suit the present species. But I doubt not that the *Falco zoniventris* also belongs to the same little group of Falconidæ for which I have proposed the subgeneric title *Dissodectes*[†], indicative of its singular double-toothed beak, and which will contain the following species:—

1. DISSODECTES ARDESIACUS (Vieill.). (*Falco ardesiacus,* Vieill. Enc. 1233. *F. concolor,* Temm. Pl. Col. 330; Sw. B. W. Afr. pl. 3). Ex Africa occ. et orient. bor.

2. DISSODECTES DICKINSONI, Sclater. Ex Afr. or. merid.

3. DISSODECTES ZONIVENTRIS (*Falco zoniventris,* Peters). Ex Madagascar.

Dr. Kirk informs me that this Hawk is known to the natives by the name of "Kakosi." His example was obtained in the valley of the Shiré.

11. ACCIPITER TACHIRO (Daud.).

Three examples. "Edge of eyelids lemon; cere olive-green; legs and toes dingy chrome." "Iris orange; legs dingy brown; cere olive-green." Magomero and Chibisa.

12. ACCIPITER MINULLUS (Daud.).

One example; female. Iris orange. Chibisa.

13. MICRONISUS POLYZONOIDES (Smith).

Accipiter polyzonoides, Smith, Ill. S. Afr. Zool. pl. 11.

Two examples. Chibisa.

14. MICRONISUS GABAR (Daud.).

Two examples. "Iris deep red." "Iris orange; cere light lemon; legs and toes yellow ochre." Chibisa.

15. MICRONISUS NIGER (Vieill.).

One example. "Iris very dark brown." Magomero.

16. MICRONISUS MONOGRAMMICUS (Temm.).

Four examples:—

a. Quilimane. "Iris brown."

b. Magomero. "Iris very dark red; legs, toes, and cere red."

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[*] Orn. Madag. p. 17.

[†] See P. Z. S. 1864, May 24th.

c. Chibisa. "Iris brownish red; legs, toes, and cere light red; edge of eyelids light red."
d. Chibisa.

17. POLYBOROIDES TYPICUS, Smith.

Two examples. "Iris very dark; cere and space round the eye, up to bill, light yellow; legs and toes yellow; claws black."

18. ATHENE WOODFORDI, Smith.

One example. "Iris light brown." Chibisa.

19. SCOPS LEUCOTIS (Temm.).

Strix leucotis, Temm. Pl. Col. 16.

One example. "Iris golden." Magomero.

20. BUBO LACTEUS (Temm.).

Two examples:—
a. Magomero.
b. Chibisa. "Iris dark russet brown."

21. BUBO MACULOSUS (Vieill.).

Strix maculosa, Vieill. N. Dict. H. N. vii. p. 44.

Two examples. "Cere dull black; iris orange."

22. STRIX FLAMMEA (Linn.).

One example. Quilimane. "Iris very dark blue."

XXV.—*On the Birds of the Zambesi Region of Eastern Tropical Africa.* By JOHN KIRK, M.D., F.L.S., F.R.G.S.

THE following is an enumeration of birds collected by myself in Eastern Tropical Africa, along the course of the Zambesi, its tributary the Shiré, and on the western shore of Lake Nyassa. To these a few have been added from the collection of the late Dr. Dickinson, of the Central-African Mission,—the birds of prey, of which that collection chiefly consists, having been already described by Dr. P. L. Sclater, from whom I have received valuable assistance in the determination of species, and as regards access to the library under his care. Mr. G. R. Gray, of the British Museum, has examined and named the few new species obtained. Ornithology having formed no especial study of mine, collections were made only where facilities offered and other duties did not interfere. This list, therefore, includes the more common birds between the sea-coast and the first rapids which stop navigation, with a few from the inland parts and lake-region.

The number of species determined extends to 150. Others were observed, to which, from want of specimens, it is impossible to refer. Considering the vast extent of the region passed over, further research may yet treble the number and make us acquainted with many new forms.

Approached from seaward, the Zambesi coast presents a long dark line of mangroves, broken here and there by low sand-hummocks, but without any mountains or rising ground visible in the distance. The river opens by four mouths, two of which are navigable to vessels of light draught, although dangerous from being little known, and from the heavy surf which frequently breaks on the bar. An alluvial plain extends for 60 miles inland, through which the Zambesi flows nearly north and south. This vast delta is covered with grasses of gigantic stature, with here and there a few trees. No elevation rises above the ant-hills, which are sometimes, however, 20 feet in height. This region abounds in game, both large and small. Antelopes, buffaloes, and wild pigs are common; also the Lion, Leopard, Serval, and Hyena, with smaller animals, the *Genetta*, *Ratelus*, *Orycteropus*, *Macroscelides*, and *Galago*. In the river and marshes are found water-fowl, including Ducks, Geese, Flamingoes, Pelicans, Herons, and Rails; in the plains, Bustards, Francolins, and Larks.

Above, the delta passes into a wide valley, the ground rising on either side, clothed with primeval forest. Here the trees attain great dimensions, and are festooned with wild vine, india-rubber shrub, and other climbers; and the Eland, Hartebeeste, Blackbuck, Kokang, and Zebra first appear. Among birds we find Guinea-fowl, both plumed and horny-headed, Crested Fly-catchers, Hornbills, Fruit-pigeons, and Sun-birds. The river is here from one to two miles wide, with large reedy islands in the channel, which is further encumbered by shallows, rendering navigation both difficult and tedious.

The Zambesi is joined by the Shiré about one hundred miles from the coast. Arising from Lake Nyassa, in lat. 14° 25′ S., this river flows southwards, following nearly the 35th degree of east longitude, the confluence being near the isolated hill Moramballa, which rises 4000 feet above the plain, and is the first elevated land met with in this region. The Nyassa, of which the north end is yet unknown, extends south for 200 miles, with a width varying from 20 to 60 miles, its shore presenting a variety of sandy bays, sheltered coves, reedy swamps, or bold rocky headlands and precipitous mountains. During the rains its level rises three feet, and its water is drained off by the Shiré, which for 60 miles of its course after leaving the lake is smooth and sluggish, having rich lands on either side. Those on the east are watered by streams coming from the mountains which divide off the Shirwa Lake, and attain at their highest an elevation of 8000 feet. Before reaching the sea-level, the Shiré makes a descent of 1500 feet, by a series of rapids 50 miles in extent, above and below which the river is free of rocks. Between the different rapids are many smooth reaches, and the scenery in this part is very fine. On the eastern side, spurs from the neighbouring mountains render the path impracticable except to a party on foot. The western bank is more even; along it we carried the ship's boat for the navigation of the lake; nor do any obstacles here exist, which might not easily be overcome, to the formation of a waggon-path. This region is covered with open forest, devoid of large trees, except the Baobab, without the overgrown stem of which an African landscape would be incomplete.

Where the rapids end, the valley again widens, and the hills recede. Hence to the confluence of the Shiré and Zambesi, in rectilinear distance, is about 100 miles, the average width between the opposite hill-slopes being 20 miles. This is one of the richest ornithological regions. The grass plains abound with Whydah-birds and Weavers, and the marshes in Waterfowl and Waders; but the greatest variety is found in the open forest and scrubby bush which covers many parts, where food, both insect and vegetable, is abundant and varied. A greater number of Eagles and Hawks are here found than elsewhere. The Great Tawny Owl (*Scotopelia peli*), the *Bubo lacteus*, *Athene capensis*, and *Falco dickinsoni* were here obtained. Purple and

Grey Turacoes are common, as likewise Mouse-birds, Parrots, and Rollers. The river-banks are honeycombed with the holes of Bee-eaters and Martins.

Herds of elephants and buffaloes roam over the plain and frequent the marshes. Of the former as many as 800 have been seen at one time from the mast-head—one of the herds, when moving in Indian file, extending over a mile. The river abounds with Hippopotami, Crocodiles, and fish of various sorts.

Few birds have reached England from the country above the confluence of the Shiré and Zambesi. The neighbourhood of the Portuguese town of Teté is a rich ornithological field, the varied physical features giving rise to diversity of plants and animals. Among the mountains which form the barrier to Zambesi navigation, 30 miles above Teté, the *Cosmetornis* was first met with in full plumage; since then it has been seen in other parts. These rapids, named "*Kebra bassa,*" or "the end of labour," offer some of the grandest scenery in Eastern Africa, second only to the bold headlands of the Nyassa and the Great Victoria Falls of the Zambesi, where the river, one mile wide from bank to bank, drops at once by a perpendicular fall of 350 feet into a chasm only 80 yards across from the face of falling water to the opposite and equally vertical rocky side. The sight of this well repays the toils and dangers of a march on foot from the east coast. From such a spot, however, the number of specimens which it is possible to carry off is limited. In my case the few I obtained were subsequently lost. It was the very driest of the hot season when we visited this region, and few birds appeared. Guinea-fowls and Bustards were common; and in the Batoka hills to the north a fine species of Francolin was seen, differing from what had been met with elsewhere.

The Antelopes of this part are peculiar, or at least contain several peculiar species. In the marshy lands alone are found the *Lechee, Poku,* and *Nakong,* whose spoor is a foot in length; the Striped Eland—a better-formed animal than some specimens of the common sort in the plains; on the hills a small and seemingly new sort of *Steinbok,* and small mountain Antelope, peculiar to the Batoka hills, named "*Teinyane.*"

The plants of this part were many of them new, indicating strange affinities to other continents, and foreshadowing what is yet to come from the unknown centre of Southern Tropical Africa. The difficulties which now stand in the way are those of transport in parts where horses cannot live, and through the coast-region, in which alone there is any great danger from the people. In the interior, with a knowledge of the language and a little good management, there is little fear. But great patience is required, and the deadly river-valleys must be avoided.

Few regions of equal extent present so uniform a type in their organic beings as Tropical Africa. In its birds this is especially noticeable, most of the species being common to both sides of the continent. Placed between the Cape and Abyssinia, the Zambesi contains a few species peculiar to each.

In its animals the Cape offers no such marked differences as we find in the plants. These constitute one of the best marked of botanical regions, characterized both by many and singular endemic species, and by the high development of natural groups elsewhere weakly represented. They may represent an ancient flora now cut off from all communication with other temperate forms by the tropical zone of Africa, which, having no lofty axial range, is as effectual a barrier to the transmission of plants as if it had been an ocean. Although the present geological features of Central Africa are of great antiquity, a difference of climate must have prevailed when the great inland seas existed, and a change in its organisms have taken place when these were drained through lateral fissures. The formation of river-deltas would commence at that time. Fossils contained in these parts attest the existence of species of animals identical with the present—probably soon after they began to be formed; while the absence of these species from the island of Madagascar would indicate that a separation between it and the mainland has taken place before the present fauna occupied the continent.

As that island contains very many plants of the peculiar Cape types, we may look on these as representing an age or flora anterior to the separation, allowing for modifications which may have since taken place under altered conditions. But, quite independently of this, we find another element in Madagascar and its neighbouring islands, the Mascarenes, Comoros, and

Seychelles, not represented on the continent of Africa, and differing from what is met with in any other part of the globe. This consists of peculiar natural orders, elsewhere unknown, and of singular forms having American rather than African or Indian affinity. Had these existed in Madagascar at the time it was united to the mainland, surely some trace of them would still remain on the continent.

These islands possess an equally distinctive fauna, parallel with the peculiar flora. The African element, however, is not so strong amongst the animals. The name proposed by Dr. Sclater for this region—"Lemuria"—is apt and distinctive. Although I do not acquiesce in the principle that a region should be named after the oldest race it contains; it should be from its actual possessors, which here is the case. But in Madagascar the African element preserved in its flora possibly represents an older time than the Lemurian fauna. Plants have more resistance than animals, and less speedily undergo change. Yet I would not anticipate that there are to be found in the fossil strata of Madagascar remains of the African Proboscideans and Antelopes. The communication between the islands and the continent may have been before these came to Africa. Since the separation, a tertiary period, with its peculiar Nummulites, mollusks and fishes, preserved in the limestone-band which encrusts the Eastern African continent in these parts, has passed away; and although the Hippopotamus and existing animals have been traced back in those regions to an old diluvial period, yet these fall far short of the separation-period of these islands from the mainland.

The wide extent of shallow soundings in the seas around Madagascar and the Seychelles indicates an old continent now under water. The Seychelles, for instance, are but the summit-peaks of a submarine table-land of great extent—much greater than that given in the charts, for these seas are far from having been thoroughly surveyed. Again, a mass of coral-reefs, rings of low lands above water, are scattered in the seas between the Seychelles and Madagascar. It is not to be supposed, however, that every peak now above the surface is of great age. Two geological structures are found. That of Madagascar and the Seychelles is of old primary axial rocks, such as we now find in the African mountain-ranges. Besides, we have Bourbon and Comoro, active volcanos, with others near them of the same origin. These may have, and some of them undoubtedly are of, a much more modern date than others, and in their fauna and flora illustrate other phenomena. The line of volcanic action is carried across Africa. The peak of Kilimanjaro, 20,000 feet high, inland from Zanzibar, has that origin, and on the other side the Cameroons claim the same; the intervening space is unknown, but may have in it other summits equal to either.

In Eastern Tropical Africa the year is divisible into three periods—that of the rains from November until April, the cool months of May, June, and July, and the hot dry season of September and October. The first showers fall in October; and, light as they are, with the increasing moisture vegetation then commences, and a few trees burst into bloom. Birds assume from that time nuptial plumage, and begin to pair. Wild fowl come in large flocks from the north with the first heavy rains. From the great marshes they never entirely disappear,—a few remain at all seasons; but the mass is away in the north, coming south in December to breed.

Many birds, such as the Guineafowl, the Hornbill, &c., which during the dry parched months frequent the vicinity of water, are far off in the forest with the commencement of the rains.

In August, September, and October the heats become intense; the air is extremely dry; the grass plains are burnt up, and become absorbents of heat; the forests are leafless; food and water alike are scarce. These phenomena have a vast influence on organic life, limiting to narrower bounds the number of species capable of enduring such conditions. Herein grasses have a great advantage: dormant during the droughts, with the first showers they spring up and rapidly increase, choking young shrubs at one season, and leaving them exposed to the fierce rays of the scorching sun at another.

Africa is by no means destitute of sweet singing birds; but they are musical only in the seasons of the rains. The loud bleating cry of the Hornbill and the cackle of the Guineafowl are more characteristic of the dry season.

The African possesses but few domestic birds and other animals. The Fowl is universal, but commonly small and tasteless. One tribe met with in the interior had discovered the art of making capons, and practised it with great success.

Besides the Domestic Fowl, Pigeons and Guineafowl are seen tame, the former of a breed similar to the tame Pigeons of Egypt. The Guineafowl is never permanently domesticated, refusing to breed in captivity.

Fam. VULTURIDÆ.

1. Gyps fulvus (Gm.).

Common in the Zambesi delta in November and December. Known as the "Tumbao-zo," or the Opener of Elephants, being supposed to be the only bird capable of penetrating the hide of the dead animal. The Common Vulture (the brown *Neophron*) may be seen patiently waiting for days the bursting, by decomposition, of the carcase.

To the inexperienced hunter the *Gyps* is a great annoyance. If game be left for an hour in the open plain while the men come to carry it off, the birds will descend, and in a very short time completely devour it. This is not so if it be covered over with a little grass or with branches, clearly proving that sight alone is the sense by which the birds discover their prey. If part of the animal be exposed, it matters not—probably owing to its being mistaken for one asleep; nor does the presence of blood seem to guide the birds, if the carcase be concealed from view.

2. Neophron percnopterus (Linn.).

One specimen was seen in the mountains to the south of Nyassa; it was not killed, but seemed exactly to resemble the Egyptian Vulture. It is a rare bird, and was nowhere else observed.

The Common Vulture, called "Deze," of which no specimen was prepared, is universal; it is a *Neophron* resembling the common brown Vulture of the Cape.

Fam. FALCONIDÆ.

3. **Haliaëtus vocifer.** Native name, "Nkwazi."

On the lakes and rivers; common among the mangrove-creeks of the coast; on the Zambesi, above the great falls, and on Lake Nyassa,—in fact, wherever the forest comes down to the shore, or high rocks overhang it.

When in search of prey, it may be seen soaring over the water, and making a sudden plunge, for a moment being beneath the surface. On securing a fish (which it does with its talons), it flies off to some sand-bank to devour it; or, if the fish be too strong, it will spread out its wings and be dragged along for some distance, landing at the first convenient spot.

Should an opportunity occur of robbing other birds, the Fish Eagle is always ready to do this. Thus it will force the Common Kite to give up a fish, and catch it before it reaches the water. In this it succeeds only after a long chase; for the Kite is a swift flier. In like manner it will take a fish from the Pelican's pouch, as witnessed by Livingstone.

This bird builds in high trees near the water. The nests are very common near the precipitous shores of the Nyassa.

4. **Helotarsus ecaudatus.** Native name, "Chapungo."

Frequent in the marshy lands of the river Shiré; in other parts far from common, but met with in all the river-valleys. Known when soaring by the short tail. Its food consists of small animals—snakes and lizards; but it will also eat carrion. Of this we had an instance when, having set a poisoned bait for a Spotted Hyena which had annoyed us, it was vomited, partly on account of the excessive dose, and also from the animal having devoured the limbs of a woman previously. In the morning, on taking up the spoor, we found the Hyena in dense reeds, recovering from the poison, and killed it. During the day, one of these Eagles was seen to alight where the food had been vomited, and, on being followed up some time after, was found in an intoxicated state, brought on board and killed, and the meat found in its stomach.

5. **Spizaëtus occipitalis** (Daud.).

Frequents the neighbourhood of rivers, feeding, not on fish, but on the animals near the banks or in the grassy, damp islands. Not observed in the mountains, but common in the Shiré and Zambesi valleys.

6. **Accipiter tachiro** (Daud.).

Common all along the Shiré valley.

7. **Micronisus monogrammicus.**

From the open forests in the Shiré valley.

8. **Falco dickinsoni**, Sclater, sp. nov.

One specimen obtained in the Shiré valley. Native name, "Kakosi."

9. **Erythropus vespertinus.**

This pretty little Hawk is found near the river. It appears only at sunset and in the dusk, when, coming in great numbers from the shady forest or from among the fronds of the lofty Borassus-palm, it hovers, swallow-like, over the plains and water, catching dragon-flies and locusts, which, with other insects caught on the wing, seem to constitute its chief or only food. In February and March it was seen in numbers on the Shiré, where the bush-vegetation and palm-forest come down to the river.

10. **Elanus melanopterus** (Daud.).

Very common both on the Shiré and Zambesi.

11. **Milvus ægyptius.**

This Kite arrives in the Zambesi valley from the north in August, and is very abundant along the river. It departs again before the month of June. It catches fish in the shoal waters, but also eats garbage of all sorts from the shore.

12. **Circus ranivorus.**

Nowhere very abundant. Observed in the Elephant Marsh, river Shiré. Hovering over the grass plains in March.

13. **Serpentarius reptilivorus.**

Not observed on the Lower Zambesi nor in the vicinity of the Nyassa. One specimen alone was seen on the plain between the Zambesi and Batoka hills, about the confluence of the

Kafne. By the natives it is respected from the nature of its food, and from its killing snakes.

Fam. STRIGIDÆ.

14. Bubo lacteus.

The habits of this bird resemble those of the *Scotopelia peli.* It is much more common, being rather plentiful among the mountains, and not unfrequently met with in the Zambesi and particularly the river Shiré valley. They have been observed commonly in pairs.

15. Otus capensis, Smith, S. Afr. Zool. pl. 67.

A common Owl in the clumps of trees bordering the valley, over the grass plains, near which it hunts, during the dusk of evening, in search of small animals.

16. Athene capensis, Smith, ibid. pl. 33.

Not unfrequent in wooded country near to open plains. Obtained in the river Shiré valley, opposite the village of Chibisa, in October.

17. Scotopelia peli, Bp.: Ibis, 1859, pl. 15.

One of the rarest of the Raptores in the Zambesi region. I know of only three pairs having been seen, and of these five birds were secured. The pairs frequented the same locality every day, and, from their colour, were extremely difficult to observe. Once started, they found more difficulty in again concealing themselves, but remained exposed on some limb of a tree, and might then be approached. They were observed living in single pairs, both in August, before the rains, and in March, in the spring. All three were inhabitants of the river Shiré valley, one at the confluence, the others near the Murchison Rapids. The food of this Owl is said by the natives to be small animals and snakes.

Fam. TURDIDÆ.

18. Bessonornis vociferans, Sw.

Shot among mango-trees at Shupanga: in full plumage in January.

19. CAMPICOLA PILEATA.

Among the rocks of the Murchison Rapids, common; in other situations not observed.

20. CRATEROPUIUS PLEBEIUS.

Common in long grass near rivers. Found in flocks of five or six. A noisy bird in the reeds, but a fine songster when perched on the Borassus-palms in the early mornings during the rainy season.

21. MOTACILLA VIDUA. Native name, "Droindwi."

Everywhere. Never injured by the natives, who have some superstitious belief connected with it.

22. MACRONYX CROCEUS.

Abundant on the sea-coast of the delta. Probably the same as that found in the interior. Seems to feed on the berries of the *Cassytha*, a creeping parasitic plant.

Fam. PYCNONOTIDÆ.

23. PYCNONOTUS NIGRICANS.

One of the commonest birds in the country. A good songster, but not equal to *Crateropus plebeius*.

Fam. ORIOLIDÆ.

24. ORIOLUS, sp.*

Found near Teté, on the Shiré, and in the Delta. Plumage varies considerably, according to season.

Fam. LANIIDÆ.

25. ENNEOCTONUS COLLURIO.

Shupanga. Shiré.

26. LANIARIUS, sp. nov.

Common near Teté, where many specimens were obtained. It is near to *L. bulbul*, but differs in being rather larger, and in having at the end of the tail-feathers a central white spot.

Specimens are in the British Museum.

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* A young bird, probably of *O. larvatus*?—P. L. S.

27. TELEPHONUS ERYTHROPTERUS.

Shupanga, on the Zambesi. Frequent also in other parts.

28. DRYOSCOPUS ÆTHIOPICUS.

Common at Shupanga, in the shady forest, near the mango-plantations, in January.

29. MELANORNIS ATRONITENS.

Very common everywhere near fields and in open wooded lands.

30. PRIONOPS TRICOLOR, Gray, P.Z.S. 1864, p. 45*.

Inhabits wood-country; frequenting the neighbourhood of the mango-plantations at Shupanga, and the foot of the mountains to the north of the river Shiré, at Chibisa.

31. PRIONOPS TALACOMA, Smith.

Native name, "Menya-menya," from the sound it makes as if two pieces of bone were struck together. There is a fleshy yellow frill around the eye, not represented in the illustrations.

Common throughout the forest both of the Zambesi and Shiré valley.

Fam. MUSCICAPIDÆ.

32. BIAS MUSICUS.

In the collection of Dr. Dickinson.

33. PLATYSTEIRA PRIRIT.

34. MUSCIPETA CRISTATA, Gm.

Inhabits shaded forest, frequenting mango-plantations. The long tail-feathers are lost in the dry season, and they seem to be peculiar to the males.

35. MUSCIPETA HOLOSERICEA, Temm.

Frequents shaded forest near the river.

Fam. HIRUNDINIDÆ.

36. HIRUNDO MONTEIRI Hartl.: Ibis, 1862, p. 340, pl. 11.

On the banks of the river Shiré, away from dwellings, flying near the water, and alighting on the clay-banks, where they were observed entering holes; but whether these had been originally formed by Bee-eaters was not ascertained.

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* This species appears to me to be not different from *Prionops retzii*, Wahlberg. Öfv. af K. Vet. Ak. Förh. 1856, p. 174.—P. L. S.

37. HIRUNDO ABYSSINICA.

During two successive seasons observed building in the house, at Shupanga, on the Zambesi, in the months of December and January; not seen elsewhere, and absent during the dry season.

38. HIRUNDO FILIFERA, Stephens.

In Dr. Dickinson's collection.

39. COTYLE PALUDICOLA.

Shot, flying round the ship, in the Elephant Marsh.

Fam. NECTARINIIDÆ.

40. NECTARINIA FORMOSA.

In Dr. Dickinson's collection. I have seen this bird but once, in a thick clump of trees near the river Shiré, during the rainy season. It is a rare bird in the region.

41. NECTARINA AMETHYSTINIA. Native name, "Sungwe."

The Sun-birds are abundant in open ground covered with low flower-bearing bushes, such as Poivreas, Dalbergias, Acacias, &c.; and they frequent especially such plants as the *Leonitis,* searching inside the corolla for insects, and probably sucking the saccharine juices. Before the rains they lose the fine plumage, and become of a dull mixed colour. December is the breeding-season; nests have been observed among the grass, attached to its stalks, and in the bushes. The young birds may be kept for some time on honey or sugar and water, which they lick up greedily from a straw or the corolla of a plant; but the absence of insect food probably causes them to die.

42. NECTARINIA BIANCONI.

Shupanga; common in the Zambesi valley.

43. NECTARINIA COLLARIS.

Zambesi and Shiré valley. Found near Shupanga and Lena, but not very common. Its nest has been seen suspended to grass-stalks.

Fam. STURNIDÆ.

44. Lamprocolius sycobius.

In large flocks near Teté, and in cultivated country along the Zambesi and Shiré, in August and September.

Fam. CORVIDÆ.

45. Corvus scapulatus, Daud.

Particularly common in the Portuguese towns, where it is the common scavenger, and also all up the river.

46. Corvus albicollis, Lath.

Generally seen near the hills; not often on the river.

Fam. FRINGILLIDÆ.

47. Crithagra chrysopyga.

Zambesi and Shiré valley.

48. Amadina, sp.?

Common in the Zambesi valley, near Shupanga: does not agree with any species described.

49. Vidua principalis.

Common everywhere; not limited to grass plains, but frequenting woods, and coming near houses. It generally retains the long plumes throughout the year, although they become miserably worn towards the end of the dry season.

50. Vidua ardens.

More rare than the *V. macrura*; but tolerably common in the Shiré valley, near Chibisa. Full plumage in December and January. Its habits are those of the former species.

51. Vidua macrura.

Inhabitant of the great grass plains of the river Shiré, where it is seen in large numbers flying from one grass-head to another, always selecting the highest. Knowing this, the natives catch them by setting a noose on any grass-head rising above the others.

The tail-feathers appear in December, and continue during the wet season. The nest is made among the grass, woven among the stalks.

52. VIDUA ALBONOTATA, Cassin.

A single specimen in Dr. Dickinson's collection. I remember having seen it once on the Zambesi, not far from a marsh.

53. VIDUA PARADISEA.

In full plumage during January and February: a frequenter of the grass plains of the Zambesi and Shiré. During the cold season it is without the long plumes.

54. EUPLECTES XANTHOMELAS.

Zambesi and Shiré valley, near water.

55. EUPLECTES SUNDEVALLII.

The nests of the different *Euplectes* are found in colonies, hanging from the extremities of the branches of such trees as the Acacia, having delicate twigs: a position overhanging water is usually chosen. The nest is commonly suspended by a long peduncle of the same material. The opening is tubular and directed downwards. Besides breeding-nests, there are generally a number of a different construction in which the birds may rest. These frequently have two openings, or consist of a ring of woven grass.

56. EUPLECTES PETITI.

Zambesi and Shiré valley.

57. HYPHANTORNIS, sp.?

Shupanga, Zambesi valley. One specimen in dull plumage.

58. PLOCEUS LARVATUS. Native name, "Chiti."

The common Yellow Weaver of the marshes, building nests of grass attached to reeds, either to a single one or between two. There is no pendulous tube to the nest; the opening is lateral near the top. Breeds in February, having from three to four young in each nest. Many pairs build near each other, selecting such spots as are inaccessible—the reeds growing from deep water.

59. PLOCEUS, sp. nov.

Shiré valley. Specimens in British Museum.

60. HYPOCHERA NITENS.

In large numbers, and extremely variable in plumage; feeds on grass-seeds. Everywhere common.

Fam. CAPRIMULGIDÆ.

61. Caprimulgus natalensis.

Obtained in the plains near the sea-coast.

62. Cosmetornis vexillarius.

The *Cosmetornis* was first observed about 300 miles up the Zambesi, a little above Teté, on the *Kebrabassa* Rapids, in November 1858, and was there decidedly common. It was again met with on the western side of Lake Nyassa (lat. 12° to 13° S.), where, in September and October, it was very common, being seen in flocks of from 15 to 20. It was also common at Chibisa on the Shiré, in lat. 16° S. It was only during the months from October until January that the singular prolongations of the wing-feathers were observed. These are peculiar to the males. Like other Nightjars, the habits of the *Cosmetornis* are crepuscular. It catches insects on the wing, and frequents bushy lands and the vicinity of water. When started during the day from the ground where they always rest, they fly swiftly to a little distance and again settle, but are extremely difficult to follow with the eye. Not so the males when in full plumage; in their case there is no difficulty; their flight is evidently retarded, and they become prominent objects from the long streamers waving behind them. A deviation from the usual habits of this bird was observed when cruising on the Nyassa. On two occasions being overtaken in a gale, and riding out a short but dangerous sea which set in and raised a surf on the shore, through which it was impossible to land, the male birds came off in flocks of about fifteen, and flew over the surface of the water. On no other occasion have I seen them take wing of their own accord, or keep on the wing during the day.

Fam. TROGONIDÆ.

63. Hapaloderma narina. Native name, "M'voraio."

In the Zambesi region a decidedly rare bird: I know of only four specimens having been seen; one in the Zambesi delta, the others at Chibisa, on the Shiré. It seems to frequent trees.

Fam. MEROPIDÆ.

64. Merops nubicoides.

Rather local; observed, however, both on the Zambesi and Shiré. On the former we found colonies of them, tunnelling their nests in the river-banks.

65. Merops savignii.

Gregarious; not seen in any numbers during the wet season. The nests are formed in the clay or sandy perpendicular banks of rivers, and consist of long passages about 3 inches in diameter, tunnelled in the face of the bank, and generally about 2 feet apart. The colony occupies a space of about 50 yards in extent. In the heat of the day they are seen flying together near their settlements, catching flies on the wing.

66. Merops bullockoides, Smith.

Solitary in habits, frequenting the banks of streams.

67. Merops variegatus.

Widely distributed in the vicinity of water, catching insects during the heat of the day. Found solitary, or in pairs, but not in social colonies.

Fam. CORACIIDÆ.

68. Coracias caudata.

A very common bird in the open woods and bush-country, near the Zambesi and other rivers. Cry harsh. The plumage varies considerably at different seasons, during the cold and dry being much less brilliant.

69. Eurystomus afer.

Local, and observed rarely near Teté. Frequent in the river-valley at Chibisa, on the river Shiré. Its habits resemble those of *Coracias caudata*.

Fam. UPUPIDÆ.

70. Upupa minor.

Everywhere rather rare, but widely distributed; found in the interior of the continent and near the coast. It is not injured by the natives, by some of whom it is named the "Little Doctor," in connexion with some superstition.

71. Irrisor erythrorhynchus.

Habits the same as of the next species, than which it is more local. Near the head of the Lower Shiré valley it was particularly abundant.

72. Irrisor cyanomelas (Smith).

A noisy chattering bird, found in bush-country and forest, commonly near rivers. In its flight it is peculiar, rising suddenly, and again descending more slowly while it flies along. Occurs in flocks of about twelve, which, on settling in a bush, run quickly up the branches and round the stem in search of insects.

Fam. ALCEDINIDÆ.

73. Alcedo cristata.

Universal on all the waters, sitting on the reeds or bushes which overhang them, and darting on its prey.

A larger species of *Alcedo* was observed among the rapids of the Shiré, but not anywhere else.

74. Ceryle maxima. Native name, "Chidolde" and "Machengwen."

Frequent throughout the country on the courses of the rivers; feeds exclusively on fish, which it catches when on the wing by dropping suddenly, carrying its prey off in the bill, and swallowing it at its leisure, perched on a tree.

75. Ceryle rudis. Native name, "Kapa-kapa."

Abundant on all rivers and lakes throughout the region, catching the fish by dropping suddenly from above. It commonly makes many unsuccessful attempts before getting anything.

76. Halcyon striolata. Native name, "Mombudzu."

Widely distributed, and equally common on the sea-coast among the mangroves, and near the river far in the interior; also in the plains. Its food consists of insects, which it seems to catch on the wing. It is a sweet songster, both before and during the rains.

Fam. BUCEROTIDÆ.

77. Bucorax abyssinicus.

Widely spread, but nowhere plentiful, and difficult to obtain, being shy, feeding on the ground in the open plains or in forest. Occurs singly, but more frequently in pairs or in flocks of five or six. A specimen is in Dr. Dickinson's collection.

78. BUCEROS CRISTATUS. Native name, "Kakomira."

A local bird, not known to the natives from the interior; frequent on the river Shiré. Year after year it returns to the same roosting-places, living in large flocks. During the breeding-season, or after the rains have set in, these become scattered in the forest, where the natives say the female hatches the eggs in a hole under ground, in which she is plastered up by the male. The vessel being at anchor near one of the roosting-places, we had an opportunity of seeing their habits. Towards sunset, in the months of August and September, they came in from different quarters in pairs; the male always known by his large bill. On perching, they uttered a loud cry heard far off, and hopped from one branch to another, always keeping in pairs. As night set in they became quiet, and roosted on the branches of the large trees. Early in the morning they were off again, an hour before sunrise, not to return until the evening. The affection of these birds for one another seemed remarkable. On one occasion, as a large male passed suddenly, I fired and missed; but the bird fell from fear, and before it had fairly got on the wing again, was secured and taken to the ship. It began to get tame, and rather unwillingly took food; but the female came every morning, when the others had gone to the forest, and remained hovering about until 9 A.M., calling to its mate which it saw on the deck to follow: at last she went off, but came back in the evening to repeat the invitation. After five days the male became sulky, would eat nothing, and died. No injury was found, and, but for the female, there seemed no reason why it should not have lived.

79. BUCEROS BUCCINATOR. Native name, "Kakomira e nono."

Rather common both in the mountains and plains, frequenting the forests, and living in small flocks. It returns every night to the same roosting-place, leaving in the day in search of fruits. It is very fond of a drupaceous species of *Strychnos* (resembling the

S. potatorum of India), the fruit of which is said to be poisonous to man. Its cry is loud and harsh.

80. Toccus erythrorhynchus.

By the natives this and the two following species of *Toccus* are included under the name "Kopi."

In all open woodlands they are common, feeding on fruits and insects; breeding in the hollows of trees during the season, the female being closed in during the time of incubation, when she moults her feathers, and is unable to fly.

81. Toccus pœcilorhynchus.

In Dr. Dickinson's collection. I saw the species in the Shiré valley; but it is rather rare, I believe.

82. Toccus melanoleucus.

River Shiré valley, in open bush and low trees.

Fam. CUCULIDÆ.

83. Chalcites cupreus.

Rare; found at the foot of Moramballa Mountain, and halfway up the Shiré, in a wood: it frequents forests. One specimen is in Dr. Dickinson's collection; probably from near the same locality.

84. Zanclostomus æneus, Vieill.

In Dr. Dickinson's collection: a native of the plains.

85. Centropus senegalensis.

Very common in all the grassy borders of rivers; looked upon by the natives with disgust, and never eaten.

Fam. INDICATORIDÆ.

86. Indicator minor.

The Honey-Guide is found in forests, and often far from water, even during the dry season. On observing a man, it comes fluttering from branch to branch in the neighbouring trees, calling attention. If this be responded to, as the natives do by whistling and starting to their feet, the bird will go in a certain direction and remain at a little distance, hopping from one tree to another. On being followed, it goes further; and so it will guide the way to a nest of bees. When this is reached, it flies about, but no longer guides; and then some knowledge is needed to discover the nest, even when pointed out to within a few trees. I have known this bird, if the man after taking up the direction for a little then turns away, come back and offer to point out another nest in a different part. But if it do not know of two nests, it will remain behind. The difficulty is, that it will point to tame bees in a bark-hive as readily as to those in the forests. This is natural, as the bee is the same; the bark-hive, "Musinga" as it is named, being simply fastened up in a tree and left for the bees to come to. The object the bird has in view is clearly the young bees. It will guide to nests having no honey, and seems equally delighted if the comb containing the grubs be torn out, when it is seen pecking at it.

Fam. PICIDÆ.

87. Dendrobates hartlaubii.

Frequent in all woods, in the Zambesi and Shiré valley.

88. Dendrobates namaquus.

Murchison Rapids, river Shiré; March. This species of Woodpecker is much rarer than the smaller sort, and limited to certain localities.

Fam. CAPITONIDÆ.

89. Pogonorhynchus nigrithorax.

Common in open forests of the Zambesi valley; frequently to be found on fig-trees.

Fam. MUSOPHAGIDÆ.

90. Corythaix livingstoni (Gray)*.

This species, which is very nearly allied to the Cape *C. albocristatus*, differing in the front feathers of the crest being somewhat larger, ending in a prolonged point, is peculiar to the mountains south of Lake Nyanza, where it was seen by Dr. Livingstone and myself in 1859, when passing to Lake Shirwa. On that occasion we noticed it in the ravine at the foot of the hills within a few miles of the river, but on no subsequent occasion was it seen so low down.

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* *Turacus livingstonii*, G. G. Gray, P.Z.S., 1864, p. 44.

It is most common near a hill called Sochi, and in the wooded river-banks of the region near the late Bishop Mackenzie's mission-station.

91. CORYTHAIX PORPHYREOLOPHUS.

This was the common species of the plains; but not noticed high up the mountains. They are found in pairs and in small flocks.

92. SCHIZORHIS CONCOLOR.

Rather a common bird in wooded country at the foot of mountains; named by the natives, from its cry, "Kwe-kwe," which it utters while perched on the top of some of the higher trees.

Fam. COLIIDÆ.

93. COLIUS QUIRIVA, Vieill.

These birds fly in large flocks from bush to bush; they are common in the open forest and bushwood of the river-valley.

Fam. PSITTACIDÆ.

94. PHÆOCEPHALUS FUSCICAPILLUS (Verreaux). Native name, "Goe."

The most common of the Parrot tribe in East Tropical Africa; usually found in small flocks or in pairs; feeds on fruits, such as figs, &c., but also eats native millet and maize. Its clear scream may be heard at a great distance.

95. PHÆOCEPHALUS LEVAILLANTI.

A much rarer species on the Zambesi than the *P. fuscicapillus.* It has been observed in flocks of four in the month of April. Its food consists of wild fruit and the kernels of nuts.

Besides these two Parrots, a third, smaller species, which I believe to be the *Agapornis roseicollis* of South Africa, was found in one spot, limited to about twenty miles, on the Shiré, between Nyassa and the rapids. It was never seen elsewhere, but was found there on two occasions. It is gregarious.

Fam. COLUMBIDÆ.

96. TRERON ABYSSINICA.

Occurs in flocks, in December and January, at Shupanga, in the Zambesi valley. Its food consists of fruits, particularly the wild figs.

97. Chalcopelia chalcospilos.

Common in dry rocky parts near Teté, also on the river Shiré in the valley. Its nest is formed in small bushes.

98. Turtur semitorquatus. Native name, "Jiwa," "Ingurumba."

Very common everywhere.

99. Turtur senegalensis.

Frequent in all the bush-country.

Fam. TETRAONIDÆ.

100. Francolinus humboldti, Peters. Native name, "Kware."

This was the only Francolin of which I brought back specimens obtained on the Manganja hills; but there are five different species of this group in the Zambesi region, some peculiar to the coast and neighbouring parts, others to the highlands and plains of the interior. The Francolins feed on the ground, and spend the whole day there, but roost in trees at night.

Fam. PHASIANIDÆ.

101. Numida mitrata. Native name, "Khanga;" in the interior, "Kaha."

Extremely common. Met with in large flocks during the dry season, when every night they come to drink at the water and roost in the trees overhanging. When the rains commence, the flocks go off to the interior, and scatter for the purpose of breeding. Although easily domesticated, it does not breed in captivity; and fresh birds require to be got, or eggs obtained from the nests in the bush.

102. Numida cristata. Native name, "Khanga tore."

This fine species was observed in large flocks at the head of the Zambesi Delta, Shupanga, on the Shiré at Chibisa, and in the interior, about forty miles east of the Victoria Falls. Its nest is formed on the ground, among grass. This keeps more to the forest than the common Guineafowl, which frequents the open plains, and resorts during the dry season to the river every night.

Fam. OTIDÆ.

103. Otis melanogaster.

In Tropical Africa there are several species of Bustard. This one only was obtained. This inhabits the grassy downs lying between the mangrove-creeks and the sea-coast at the Zambesi mouth. It is a very shy bird, difficult to approach. They occur solitary or in pairs, and seem to remain throughout the year. No marked difference observable on the wing appeared between the sexes. But one only was shot, and that could be obtained only by the rifle. In the Kalahari Desert there is a much larger species; and in the plains beyond the Victoria Falls a smaller one, very similar, if not identical with the coast-bird, is tolerably common. The same was seen on the shores of the Nyassa Lake.

Fam. GRUIDÆ.

104. Balearica regulorum. Native name, "Garv;" in the interior, "Mowang."

Found on the Zambesi and Shiré at all seasons; also on Lake Nyassa. It is seen in flocks in the interior; but near the coast more commonly in small numbers.

Fam. CHARADRIIDÆ.

105. Œdicnemus senegalensis. Native name, "Maruro." Frequent by the river-bank, Zambesi, Shiré, and Roruma.

106. Chettusia crassirostris, De Filippi.

River Shiré; common in open cleared spaces and cultivated fields.

107. Vanellus lateralis, Smith, S. Afr. Zool. pl. 23.

A very noisy bird, flying overhead and uttering its harsh chattering cry. To the sportsman it is a peculiar annoyance, as it is certain to direct the attention of the game to his presence. Very frequent in cultivated fields near water.

108. LOBIVANELLUS SENEGALENSIS.

River Shiré and Zambesi. Frequents cultivated lands.

109. ÆGIALITES TRICOLLARIS.

From the Elephant Marsh, river Shiré.

110. GLAREOLA NORDMANNI.

Lake Nyassa, on the sand, in October; also on the Zambesi, in the same month. Not seen at other times of the year.

Fam. SCOLOPACIDÆ.

111. GALLINAGO NIGRIPENNIS, Bp.

Commonly in pairs; the habits are like our own Snipe, which it equals in flavour. An inhabitant of the Shiré marshes.

112. TRINGOIDES HYPOLEUCA.

Frequents open sandy places on the river-bank, along the Zambesi and Shiré.

113. TOTANUS GLAREOLA.

River Shiré, marshes and sand-banks; common.

114. STREPSILAS INTERPRES.

Shores of Lake Nyassa.

115. RECURVIROSTRA AVOCETTA.

Not unfrequent in damp localities near marshes.

Fam. ARDEIDÆ.

116. ARDEA GOLIATH.

A difficult bird to obtain, its great height enabling it to command a view over the grass or marsh-vegetation. Nowhere plentiful; but to be seen in the swamps of the Zambesi Delta and on Lake Nyassa.

117. ARDEA PURPUREA.

Common in all marshy places and near rivers. Breeds in the swampy spots or islands, making its nest at the foot of the reeds: each has two or three eggs in February. They live in societies, returning to the same place a little before sunset.

118. ARDEA ATRICOLLIS.

Scattered throughout the marshy regions of the rivers and lakes; commonly found singly or in pairs.

119. Buphus comatus.

Commonly in pairs; feeds in marshes and shallow water.

120. Herodias calceolata (Du Bus).

Occurs singly or in pairs along the marshy parts of the river Shiré. Plumage dark slate-colour, almost black.

121. Herodias bubulcus. Native name, "Kakoe."

Follows herds of elephants and buffaloes, sitting on their backs, or flying near to them; so that in long reeds the game may be followed when nothing but the birds are visible.

122. Butorides atricapillus.

By no means common. A solitary bird, keeping to the river. Flying close along under the banks, and perches on the bushes which overhang, from which it watches for its prey.

123. Nycticorax europæus. Native name, "Zonzi."

Common in all marshes; roosting among the reeds on the islands. Flies in the dusk of evening.

124. Leptoptilus crumeniferus, Cuv. Native name, "Gote."

The feathers under the tail are much valued, but never collected in Eastern Africa. This bird feeds on fish, reptiles, and carrion. It is readily tamed, and is then of use near a house.

125. Mycteria senegalensis.

Not uncommon on the Zambesi and Shiré; more frequent on Lake Nyassa and the river Rovuma. Feeds on snakes, frogs, and fish. On the Rovuma it was seen catching fish in shallow water, by running forward rapidly, so as to make the fish rush past it, when it caught them, keeping its bill all the while in the water. They are commonly found in pairs,—never in large flocks.

126. Anastomus lamelligerus, Temm.

Frequent on the Zambesi and Shiré, in marshy localities. Found usually in flocks, roosting together on the marsh-shrubs or on neighbouring trees. Feeds on shell-fish. The nests are placed in trees.

127. Scopus umbretta. Native name, "Nyamchengwe."

Although seemingly a clean feeder, eating small fish, the

Africans look on this bird as unfit for food, and also as sacred, or as possessing the power of witchcraft; and to injure it is everywhere regarded as unlucky. It haunts water, both running and stagnant. In its nest it is the most remarkable of all birds in Tropical Africa. This is built either on a ledge of rock or more frequently in some large tree. It is the work of a single pair, and yet is colossal, sometimes measuring six feet in diameter, in the form of a flattened dome. The entrance is at one side, and small. The greater part of the mass is solid, and composed of sticks and branches of trees intimately woven together. This serves for many years. The birds remain throughout the year.

128. PLATALEA, sp.?

No specimen was obtained, although the bird is not unfrequent on the Zambesi and lake. The bird resembles that of Europe, as far as could be judged in the distance.

Fam. TANTALIDÆ.

129. TANTALUS IBIS.

Common in all the rivers; feeding on the mud- and sand-banks.

Their flesh is very good; but the outer layer of fat must be removed, otherwise they are too oily. They feed in shallow water, on small insects and larvæ in the mud and sand. Commonly found in large flocks.

130. IBIS RELIGIOSA, Cuv.

Arrives from the north in December. It is found at all seasons near the coast, where it feeds on the sea-shore at low water. Its flesh is very good eating.

131. FALCINELLUS IGNEUS.

Rather common, but a shy bird, difficult to approach; its cry is loud and harsh. It feeds in marshes and near rivers, but perches on the high trees when disturbed.

Fam. PARRIDÆ.

132. PARRA AFRICANA.

Very common wherever there are water-plants. When the

Pistia comes down with the rise of the water in masses and covers the surface of the Zambesi, these birds run about on the water-weeds, flying from one mass to another. The natives have a peculiar abhorrence of the flesh, although the birds are fat and well-flavoured.

Fam. RALLIDÆ.

133. Porphyrio, sp.?

No specimen obtained; but in the Quilimane marshes it is frequent. Colour, clear blue.

134. Rallus cærulescens.

Common in the grass, bordering marshes, in the upper part of the river Shiré.

135. Limnocorax mosambicus, Peters. Native name, "Nwana gombe a nwana."

Common in all the marshes, living in the grass, and feeding among the floating vegetation. Never flying further than a few yards.

Fam. PHŒNICOPTERIDÆ.

136. Phœnicopterus parvus.

Zambesi Delta, Shiré valley, Lake Nyassa, Mozambique. A constant dweller throughout the year in the Zambesi Delta Found in other parts during the wet season only. It is commonly in large flocks. Considered excellent food, but difficult to obtain.

Fam. ANATIDÆ.

137. Sarcidiornis africanus. Native name, "Nango mwamba."

Found only during the rainy season and the few months which follow, but not seen during the dry hot time. Feeds in fields and marshes; perches readily on trees. The flesh is good, more tender than that of the Black Goose, but without the delicate flavour of the Whistling Duck.

138. Plectropterus gambensis. Native name, "Tsekwe," from its note.

These birds vary from 10 to 14 lbs. weight. They come with the rains, in flocks of ten or twelve, and remain to breed in the marshes. Their favourite food is the "Nyka," or tuberous enlargement of the bud of the *Nymphæa,* which they swallow. They perch on trees, and seem occasionally to roost. In the daytime they often settle on the trees near their feeding-ground.

139. CHENALOPEX ÆGYPTIACUS. Native name, "Nango."

Frequents the Zambesi and Shiré; breeding during January at the coast, and inland on the islands. Either solitary or in pairs, never in flocks. This is the worst of all the Duck-kind for the table, being in many cases quite uneatable.

140. NETTAPUS AURITUS. Native name, "Sequiri."

This beautiful bird is confined to lagoons near the rivers and lakes, being very seldom to be seen on the main waters. It occurs in pairs, and in flocks of eight or ten. When disturbed, it flies along the water, following all its windings, never crossing the country. Its habits are entirely aquatic. It dives, and remains long under the surface, and is very difficult to obtain when wounded, getting entangled in the weeds at the bottom.

141. DENDROCYGNA PERSONATA. Native name, "Soriri."

In all marshy lands very abundant; large flocks arriving with the rains in November and December, but never entirely deserting the region. It breeds in the marshes and on islands. The favourite food is the seed of the *Nymphæa.* During the night the various flocks pass to and fro, uttering a frequently repeated clear whistling note. The flesh is particularly fine; and sitting in dense masses on the mud-banks, they may be had in great numbers from a canoe while passing the marshy regions, in which large game is difficult to procure.

142. ANAS SPARSA, Smith. Native name, "Tunta."

This is a bird nowhere very common, but widely distributed. It occurs in single pairs. The first appearance is with the rains, and it remains to breed. After the end of April it is not seen. The young may be obtained in March.

Fam. PODICIPIDÆ.

143. Podiceps, sp.?

Very abundant in a lagoon near Mozambique, but not observed on the Zambesi. Whether this is the same species as that found in the hill-lake in Joanna Island is uncertain, as specimens were not compared; in size they resembled each other, both being small.

Fam. LARIDÆ.

144. Sterna caspica.

In the month of January these birds were found breeding in company with the following species, on the low sand-islands off the mouth of the main stream of the Zambesi. There were commonly two or three eggs in each nest. The eggs were of a dirty grey, with black spots. The nests resembled those of the other species.

145. Sterna velox, Rüppell.

Found breeding on the low treeless sand-island off the Luabo mouth of the Zambesi, in the month of January. The nests, which were placed a few yards from the tide-mark, consisted of slight hollows in the sand, with a few sticks gathered round. They were quite open and exposed, or placed occasionally under shelter of any log of wood cast up, but never in the centre of the island. This place is well protected from visits of monkeys by a wide extent of water. In former years these birds, and also Pelicans, used to breed on a similar spot at the Kongane mouth; but since, by the filling up of one of the channels, there has been communication with the mainland at low tide, they have deserted it, and the young *Avicenniæ* springing up harbour the small Monkey.

146. Rhynchops flavirostris.

In the upper parts of the Zambesi and Shiré these birds may be seen passing up and down, skimming the water, commonly in flocks of ten or twenty. These singular birds are most active in the afternoon. In none examined was any food observed in the stomach. They are always extremely fat, and troublesome to skin.

Fam. PELECANIDÆ.

147. Plotus levaillantii.

In all waters, from the coast to the interior, to be seen sunning its wings on rocks or trees; on the least danger betaking to the water. The plumage varies very much; sometimes it is of a rich glossy black, at other times of a rich brown. Its food consists entirely of fish, which it catches under water, coming to the surface before swallowing it.

148. Phalacrocorax africanus. Native name, "Chidankwe."

Common in all rivers, lakes, and lagoons. Its breeding-places are the retired islets among the rapids, commonly unapproachable.

A second species, much larger and with white neck, occurs rarely on the Lower Zambesi, but is common among the rapids of the Shiré, where it breeds, and on Lake Nyassa. In the shallow lake through which the Shiré flows after leaving the Nyassa, the natives drive piles in the bottom, at a distance from shore, and rising a foot above the surface. An elastic piece of wood, with a noose attached, is placed on the main pile, and serves to trap the Cormorants and Darters, which come to rest on them.

149. Pelecanus, sp.?

The Pelican of the Zambesi comes in numbers before the rains, or with the first heavy showers; but individuals are to be found at all seasons.

On one occasion a large flock was found breeding on the low sand-island at the Kingane mouth. The nests consisted of a slight hollow in the sand, with a few sticks placed as a platform, to keep the eggs slightly raised; each contained from two to four eggs, and the nests were placed side by side. From one colony several bucketsful of eggs were obtained. In the pouch were several species of parasitic worms, which we did not notice in other birds.

150. Prion banksii, Smith. *Pachyptila banksii,* Smith, S. Afr. Zool. pl. 55.

After storms these birds come ashore in a fatigued and helpless state in great numbers, and die on shore. They are seen at sea in the Mozambique and Indian Ocean, and are very abundant off the banks near the Seychelles. When driven ashore, they are in so emaciated a state as to dry up without undergoing putrefaction.

XXVI.—*Note on* Aquila barthelemyi, *Jaubert.*

By J. H. GURNEY.

IN the spring of 1857, I was informed by my friend M. Jules Verreaux that he could procure me two living specimens of *Aquila barthelemyi,* which had been recently taken from the nest on the Sainte Victoire Mountains, in the south of France—the locality especially designated as the head-quarters of this Eagle by Messrs. Jaubert and Barthélemy-Lapommeraye, in their work entitled 'Richesses Ornithologiques du Midi de la France.'

Having requested M. Verreaux to obtain for me these young Eagles, they were accordingly forwarded soon afterwards; but on their arrival I could perceive nothing to distinguish them from ordinary Golden Eagles of the same age. One of them had been injured in the wing; and as this accident much detracted from its beauty as a living specimen, in February 1858 I had it killed, mounted, and placed in the Norwich Museum. This bird, on dissection, proved a male, and agreed both in size and colour with male birds of the ordinary *Aquila chrysaëtos* of the same age, being entirely destitute of the white scapular spots by which *Aquila barthelemyi* is ordinarily distinguished. The surviving bird (which I believe to be also a male) has remained alive in my possession to the present time; but I could never detect anything in its plumage different from that of the Golden Eagle until April of the present year, when, on visiting the bird after some months' absence from home, I found, to my pleasure and surprise, that the first scapular feathers on both sides of the body had become snow-white, exactly as depicted in the plate given in Messrs. Jaubert and Barthélemy-Lapommeraye's work, and closely resembling (allowance being made for the difference of size in the two birds) the white scapular spots which occur in most specimens of *Aquila pennata.*

I subsequently requested Mr. Reeve, the able and intelligent curator of the Norwich Museum, to examine the somewhat extensive series of Golden Eagles in that collection, for the purpose of ascertaining whether similar white scapular spots exist in any of the specimens there deposited. Mr. Reeve informs me that in one example only has he detected this peculiarity, viz. in an immature male bird from southern Algeria. This appears to prove that although my bird was so long in acquiring the white scapular spots, they are sometimes assumed much earlier, and confirms the statement in Messrs. Jaubert and Barthélemy-Lapommeraye's work, that, in some instances at least, these distinctive marks are apparent in *Aquila barthelemyi* immediately on quitting the nest. The Algerian specimen above mentioned, and a German one which is alluded to by the authors of 'Les Richesses Ornithologiques,' are, so far as I know, the only specimens of *Aquila barthelemyi* which are recorded as having been obtained out of France.

It seems, therefore, that the title of this singular race of Eagles to be considered as specifically distinct from *Aquila chrysaëtos* merits careful consideration and further observation from those ornithologists who are interested in the study of the birds of prey.

XXVII.—*Notes on the Ground-Parrot of New Zealand* (Strigops habroptilus). By JULIUS HAAST, of Canterbury, N. Z.*

AMONGST the remarkable birds of New Zealand, the *Strigops habroptilus* (called "Kakapo" by the Maories, and "Ground-Parrot" by the settlers) occupies a prominent place, not only on account of its size, but likewise on account of its mode of life and its manner of forming an habitation. Very little is known about this inhabitant of our forests; so that the communication of some observations which I made during my last trip to the west coast may be considered interesting. During several years I have travelled in the interior of New Zealand, but not until my last journey have I been able to see or learn anything about the natural history of this bird, although I had often heard its call and seen its footmarks in the river-beds and on newly fallen snow. The principal reason why I never caught or even saw this bird (which, by the way, is not at all scarce in certain parts) is, doubtless, because I never had a dog with me; for without a dog it is only by accident that one even sees it.

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* Translated from the 'Verhandlungen' of the Zoological and Botanical Association of Vienna, of October 10th, 1863.

The principal resorts of the Kakapo are the grass-plots in the open and mossy beech-woods near mountain-streams, and rocky declivities, beneath large moss-covered stones, overgrown by beech-roots; also the mossy banks of the larger rivers, which are flooded now and then in consequence of a sudden thaw or heavy rains. On the western slope of the Alps, as we go deeper into the forests, the grain-eating birds grow less in number; and only where fir-trees are met with, Pigeons or "Kakas" (*Nestor*) are found. Further on still in the central chain of mountains they disappear likewise; and even the Wood-hen, or Weka (*Ocydromus*), is only found in those small districts near mountain-streams where the forest is interrupted by grass-plots and brushwood. In the beech-forests of this subalpine region, where vegetation is most exuberant, and where the contemplation of the deep green of mosses and ferns refreshes the tired traveller, animal life is very scarce, and only the Kivi (*Apteryx*), two small insectivorous birds—the native "Robin" and "Wren"—and the Norwegian Rat (which has even here driven away the native Rat, and usurped its place) are to be found. Here then is the spot where the "Kakapo" finds shelter and support; whilst above, the less magnificent but still handsome *Nestor notabilis* and *N. eslingii* feed on the seeds of the numerous shrubs and the roots of alpine herbs.

It is remarkable that the Kakapo is never found on the eastern side of the Alps, though extensive beech-forests are to be met with there also. The only part excepted is the valley of the Makavora River, which forms the Wanaka Lake. It appears therefore to be confined to the western slope of the principal mountain-chain, and only to pass over the low and wooded defile that leads from the sources of the Haast River to those of the Makavora. Even here, however, it is not found beyond the mouth of this river near the Wanaka Lake, as lower down there are no forests. The Kakapo is very frequent in the valley of the last-named river and in the Makavora forest, though many woodcutters are constantly employed there. When we camped on the outskirts of this forest, we heard its call continually; but none of the woodcutters seemed to be aware that a bird of such large size was near them, though its unusual piercing call had aroused their attention. In the Wilkin valley (where I found traces of wild dogs) the Kakapo is less often found; and in the Hunter valley, containing large beech-forests, and divided off by a not very high chain of mountains, it is not to be met with at all.

It is not my intention to give a minute description of the Kakapo; but I will only observe that kind nature has given to this helpless animal, for its own preservation, a plumage so like moss in outward appearance that it is difficult to distinguish one from the other at even a short distance. The black hairy feathers on each side of the beak give it a somewhat wild appearance; and the curious radiating wreaths of feathers round the eyes make it look like an Owl; but the large Parrot-like beak and the two reversed toes determine at once the affinities of the bird. Until now it has been supposed that the Kakapo was a night-bird, but my own observations have convinced me that this is not exclusively the case. It is true, however, that its call is mostly heard about an hour after sunset, at which time it commences to roam about, where the thick foliage creates a kind of artificial darkness. Upon one occasion, about the time just mentioned, a Kakapo came up close to our tent, attracted, no doubt, by the light, and was caught by my dog; but on two other occasions I saw this bird feeding in the daytime, and apparently very careful to avoid any coming danger. The first time I saw a Kakapo by daylight was on my return from the west coast. It was afternoon, and the sky rather cloudy. The bird was sitting on a stump in an open part of the forest, not far from Haast River. On my approach it disappeared quickly, but was nevertheless caught by my dog. The second time I saw the bird in daytime was in a mountain-pass, where it (a large specimen) was sitting on a Fuchsia-tree, 10 feet from the ground, and eating berries. As soon as the bird saw me, it threw itself off the tree as if it were shot, and escaped under some large fragments of rock. The most surprising thing was that it did not open its wings, nor use them in any way to break the fall. It is strange that a bird with well-formed wings should prefer to use its feet as a means of locomotion, especially as the feet seem rather formed, judging from the position of the toes, for the purpose of climbing than for walking or running. This seems to be a case that clearly proves that variations in form adapt themselves to the mode of life. On examining the wings, I found them easily moveable, and in no way different from other varieties of the *Nestor* family. The wing-feathers are well formed; but the wings are not only very fleshy, but the tendons are likewise very thin and imbedded in fat, apparently in consequence of their not being used. To try whether the Kakapo would not fly, or at least flutter, when pursued, I had a large specimen, captured by my dog without its being injured, brought to an open place, where there was sufficient space to open its wings whilst running, even supposing a large space were required for the purpose. But, instead of attempting this, the bird, when released, ran towards the nearest thicket, moving much like a Fowl, with a celerity that, considering the position of its toes and its unwieldy form, greatly surprised me. During this experiment I had posted myself sideways from the bird, and it appeared to me that the wings were closely pressed to the body; but some of my companions, who stood behind, observed that the wings were slightly open, more, apparently, for the purpose of preserving a right balance than to aid it in running. Though the Kakapo's body does not seem formed for much locomotion, it roams to considerable distances at times. On one occasion we found the impression of its feet in sand more than half a mile from the river's bank. The crops of those we examined we generally found filled with minutely divided moss, in enormous quantities. They were greatly extended, and sometimes so heavy that a single one weighed several ounces. An exception to this we observed in two specimens which had eaten the berries of a species of *Coriaria,* which gave a peculiar smell to the flesh. The bird

appears much smaller when the crop is empty. The mass of this little nutritious food which the bird must collect shows why it lives on the ground, and in barren and unproductive districts where no other species of the same family could exist. Another peculiarity, perhaps likewise resulting from its vegetable diet, is, that the bird, instead of having, like others, an oily soft kind of fat under the skin, possesses a great quantity of firm and white fat. Its flesh is better and more substantial than that of any other species of Parrot, and of exquisite flavour. To travellers in the wilderness this bird is a great dainty, and I can well understand that the old Maori from the west coast, who accompanied us, felt his mouth water when anybody mentioned the Kakapo.

It is certain that a bird unable to fly, no matter how strong its claws and beak are, could not defend itself from its enemies by merely climbing trees or hiding in holes in the earth. We may be sure that wherever man, with his two domestic animals, dog and cat (many of which have become wild here), has not yet been, the Kakapo is to be found in great numbers; and that, before the appearance of man, neither the native dog "Kuri" (now no longer to be found) nor any other animal existed that hunted birds for its support. Equally certain is it, that those quadrupeds, traces of the feet of which have been found on alpine river-beds, but none of which have ever been seen or obtained by scientific travellers, must subsist entirely on fishes. My examinations of the subterranean habitations of the Kakapo corroborate these opinions. I expected to find the Kakapo in well-excavated caves, with entrances which would only permit the inhabitant to enter—something like the lair of a fox or badger. Such, at least, the natives assured me to be the case; but I found, with the exception of a single instance, that the habitations consisted of clefts or fissures in rocks, holes between the roots of decayed trees, or natural openings between fragments of rock, where my large dog easily entered, and generally returned head foremost, carrying his prey in his mouth. This proves the dog must have been able to turn round when within. At first my dog was severely punished by the beak and claws of the Kakapo; but, after a little experience, he learned how to grasp the bird through its head at once. The Maories told me the Kakapo was a very valiant bird, and often fought successfully with their dogs; but this is scarcely credible, unless their dogs are a very weakly race. My dog, though punished at times, never had a serious battle with one of them. The Kaka (*Nestor meridionalis*) is a more respectable opponent. With outspread wings he throws himself on his back, and defends himself stoutly with his beak and claws. As I previously observed, the Kakapo sometimes lives in places liable to be flooded. When this occurs, it is, of course, obliged to escape; but I do not believe that it is able to climb trees,—at least, I never saw it do so when pursued by a dog. Upon one occasion, however, a Kakapo climbed a half-fallen tree-stump, and remained at the top until my dog desisted in his endeavours to capture it. All the habitations of the Kakapo that I examined were natural caves or holes, with the exception of one, which was artificially excavated. On the northern part of the Haast River, near the mouth of Clark River, the river-bank had, in consequence of an accumulation of deposits, reached a height of from 6 to 8 feet. I observed here several round openings, not large enough for my dog to enter. After smelling about for some time, he commenced scratching the soil at a place where, as I subsequently perceived, the end of the hollow was situated, and caught the bird. This shows conclusively the ability of the bird to dig and excavate. The Rev. Mr. Taylor says, in his work 'Te ika a maui,' that the Kakapo lives in flocks; but, according to my own observation, the contrary seems to be the case. I have never found more than one bird in a hole; but very frequently I observed, at a distance of 20 to 30 yards from the first, a second hole, and the bird in this was generally of a different sex from the one in the first excavation. Our camp-fire was several times visited by a pair of them. It appears therefore to me that the birds live singly, but that at night they go together in pairs for the double purpose of feeding and copulation.

I know nothing about the nesting of the Kakapo; but when the female roams about with her young, she utters a peculiar call, more resembling the grunting of a pig than anything else. The Rev. Mr. Taylor enumerates two kinds of Kakapos on the northern part of the island. There are not two kinds between Lake Wanaka and the west coast. I have examined more than twenty specimens, and all of them belonged to the same species. They were about as large as a well-sized Fowl, therefore rather larger than the Kiwi, which I likewise found during this trip.

I do not know whether a specimen of this interesting bird has ever been preserved in spirits and sent to Europe, to determine whether the osteology agrees with that of other birds. Our provincial government is organizing extensive scientific expeditions for the thorough examination of the west coast; and it is to be hoped that we shall soon obtain live birds of this species to examine and ascertain all those details about them which want of time during my voyage prevented me from doing.

XXVIII.—*A Sixth additional List of Birds from Natal.*

By J. H. Gurney, M.P., F.Z.S.

(Plate IX.)

I have the pleasure of communicating to the readers of the 'Ibis' some further notes on the birds of Natal, which have been forwarded to me by my friend Mr. Ayres, with an additional collection of the birds of that colony.

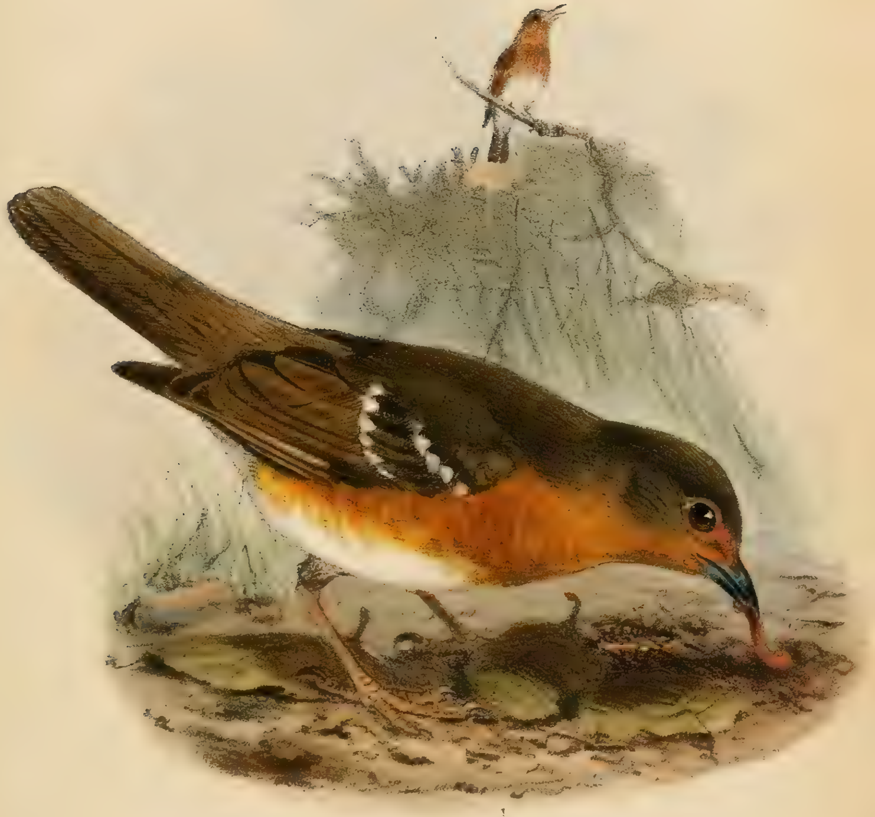
The remarks which I have appended to some of Mr. Ayres's observations are distinguished by brackets and initials, as on previous occasions.

218. Gypaëtus meridionalis, Bp. Southern Lammergeyer.

Male. Immature. Iris very light greyish brown, surrounded by a broad and bright ring of scarlet; the eye very small for the size of the bird; bill pale, cere and base bluish; tarsi and feet ash-colour. The Lammergeyers are not at all plentiful here; they are very seldom seen on the coast, principally confining themselves to precipitous country more inland. The only locality in which I have yet seen them has been amongst the rocky hills of the Inanda location, or thereabouts, where they sail slowly about in search of their food, generally singly, but occasionally in pairs.

Their flight so much resembles that of the larger Falcons that, on shooting a specimen, I was much surprised and disappointed to find so much of the Vulture about it.

Ibis, 1864, PL, IX



J. Wolf, del, et lith.

M & N Hanhart, Imp.

TURDUS GURNEYI.

These birds swallow good-sized bones; the stomach of the specimen which I shot was crammed with them. They had evidently been swallowed without any meat: in fact, I saw this bird alight and pick up a good-sized bone, with which he was making off when I bagged him. The largest of these bones was, I think, part of the vertebra of an ox, and measured about 4 inches in length, nearly 3 inches in breadth, and 2 inches in thickness. A considerable quantity of hair of the Rock Rabbit (*Hyrax capensis*) was amongst and adhering to the bones in the Lammergeyer's stomach, proving that the bird also preys on this animal; and as the Rock Rabbits are very numerous in the rocky country frequented by the Lammergeyer, and are particularly fond of choosing exposed situations on the tops of rocks and large stones, and of sleeping there in the sun on hot days, no doubt they are often pounced upon and carried away by their powerful enemies, though the feet and claws of the Lammergeyer do not appear much formed for grasping.

219. Cotyle paludicola (Daud.). South African Sand-Martin.

Male and *female.* Iris dusky brown; bill nearly black; tarsi and feet dusky. These Martins I have never seen on the coast. I found many of them during the winter months about the stream near Pieter-Maritzburg; they occasionally alighted to rest on the overhanging reeds, where, I have no doubt, they roost at night, as I have frequently found them thus perched before the sun rose.

Sometimes they hunted singly, sometimes in companies; and, their flight being very eccentric, I found them difficult to shoot. The plumage of both sexes is alike.

220. Nectarinia olivacea, Smith. Olivaceous Sun-bird.

Male and *female.* Iris dark; bill black; tarsi and feet dusky black. These birds are common on the coast and for some distance inland; they are particularly fond of shady banana groves, taking the nectar from the long drooping flowers of the plant, and chasing one another about with great pertinacity. The plumage of the female is not so bright as that of the male.

221. NECTARINIA VERREAUXII, Smith. Verreaux's Sun-bird.

Male. Iris dark; bill black; tarsi and feet dusky. Their food consists of nectar and small insects. I have only seen these Sun-birds in the coast bush, and not so plentifully as most other species of *Nectarinia*. From what I could see, I think their habits resemble those of *Nectarinia afra*.

222. DRYMŒCA SUBSTRIATA, Smith. Speckle-breasted Drymœca.

Male. Iris light reddish brown; bill black; tarsi and feet dusky pale. The female is similar in size and plumage to the male.

I found a family of this *Drymœca* in July (midwinter here) about forty miles inland, amongst some scrubby bush; also a solitary individual some time after, in some high sedgy grass. These birds seem much to resemble *Drymœca subflava* in habits and appearance. Their food consists of small insects.

223. CALAMOHERPE GRACILIROSTRIS, Hartl. Slender-billed Reed-Warbler.

Male. Iris reddish hazel; bill, upper mandible dusky, under mandible pale; tarsi and feet very dark ash or ashy black. These birds are less plentiful than most of the Warblers, but are generally dispersed throughout the colony. They are always found amongst the reeds and rushes which border the streams, rivers, and lagoons. Their notes are loud, clear, and pleasant. They fly with greater ease and swiftness than most of the Drymœcas. Their food consists of small insects.

[Dr. Hartlaub considers this species of Reed-Warbler to be new to science, and has furnished me with the following description of it:—

"CALAMOHERPE GRACILIROSTRIS, sp. nov.

"Supra pallide brunnescens, pileo subcinerascente; uropygio et supracaudalibus magis rufescentibus; cauda brunnea; remigibus nigricanti-fuscis; fasciola supraciliari et corpore inferiore albidis; abdomine imo, cruribus et subcaudalibus pallide fulvescentibus; subalaribus rufescenti-albidis; pedibus nigris; rostro fusco, mandibula versus basin pallidiore: long. tota 6·5, alæ 3·0, caudæ 3·0, rostr. a fronte 0·6, poll. Angl. et dec."—J. H. G.]

224. Erythropygia pectoralis, Smith. Thorn-Chat.

Male. Iris hazel; bill dusky; tarsi and feet pale dusky.

I got this bird amongst the thorns inland, and have also seen it in the bush near D'Urban; but it is certainly not plentiful. It feeds upon insects; its song is sweet, but weak.

225. Thamnolæa cinnamomeiventris (Lafr.). White-shouldered Chat.

Male. Passing a Dutch farmer's one day, I saw this Chat hopping about upon a large stack of faggots some 200 yards from the house. Being a scarce bird, I shot it at once, when one of the farmer's sons came running to me, exclaiming, in tones of anguish, "What have you done? You have shot the Mock-bird." He went on to tell me that it was a great favourite of theirs; that it came into the house every day to be fed, and was particularly fond of admiring itself in the parlour looking-glass; and that the bird had been with them for years. I expressed my sorrow for having been so unfortunate as to cause them such grief for the loss of their favourite, and offered to preserve the skin and send it to them; but the young Dutchman said, "Of what use is the skin? The bird is dead: keep it." The specimen sent is the skin of this curious bird.

226. Petrocincla explorator, Vieill. Sentinel Rock-Thrush.

Male. Iris dark hazel; bill, tarsi, and feet black.

These birds are found in the open country, and are generally seen perched on some low hillock or stone. They are solitary, and not at all plentiful. Their food consists of small insects.

227. Turdus gurneyi, Hartl. Gurney's Thrush.

Male. Iris hazel; bill dusky; tarsi and feet dusky pale. This bird I shot in the bush on a precipitous range of hills about six miles beyond Pieter-Maritzburg; it is, I believe, the only one I have seen, and I know nothing of its habits.

[My friend Dr. Hartlaub, who has examined this specimen, considers that it belongs to a species hitherto undescribed, to which he has paid me the compliment of attaching my name.

The following detailed description (with the aid of the annexed Plate, from a drawing by Mr. Wolf) will supply the means for a ready identification of the species.

"TURDUS GURNEYI, sp. nov. (Pl. IX.)

"Supra brunneo-olivaceus: macula inter oculum et rictum, gutture, pectore et hypochondriis læte cinnamomeo-rufis; abdomine et subcaudalibus pure albis; cauda dorso concolore; tectricibus alarum majoribus nigris, macula alba terminatis; subalaribus albis cinnamomeo mixtis, margine frontali rufescente; rostro nigro; pedibus pallidis: long. tota 6·5, alæ 4·5, caudæ 3·3, tarsi 1·3 poll. Angl. et dec.

"I have great pleasure in naming this fine new typical *Turdus* after Mr. J. H. Gurney, who has so materially advanced our knowledge of South-African ornithology by his able papers on the Natal collections of Mr. Ayres."—J. H. G.]

228. LIOPTILUS NIGRICAPILLUS, Vieill. Bush Black-cap.

Male. Iris hazel; bill pale, tinged with red; tarsi and feet pale. I have, at different periods, met with several solitary individuals of this species, always either amongst dense underwood or thick creeping plants. They appeared to be sluggish in their habits, and to feed on small fruits and berries. Their stomachs contained no insects.

229. CAMPEPHAGA NIGRA, Vieill. Black Caterpillar-eater.

Male. Iris very dark brown; bill black, yellow at the gape; tarsi and feet black.

This bird, when sitting, much resembles the Drongo Shrikes in appearance, but, on a near inspection, may be readily distinguished by its straight tail, that of the Drongos diverging broadly at the tip. The few I have seen were solitary birds. The one now sent I observed frequently fly down from the tree on which it was stationed, on to the grass, to pick up caterpillars.

[In Dr. Hartlaub's work on the Birds of West Africa, the following expressions occur with reference to this species:—"Nitide nigra æneo-resplendens, macula scapulari longiuscula lætissime croceo-flava * * * fœm. tota nigra, macula scapulari flava nulla."

The present specimen, which is marked by Mr. Ayres as a male, and another example which was sent to me from Damaraland by Mr. C. J. Andersson, and which was ticketed as a male by that gentleman, are both entirely black, and show no signs of the yellow shoulder-spots described by Dr. Hartlaub, which leads me to think that the South-African bird must be specifically distinct from that which is found in Senegambia, to which Dr. Hartlaub's description relates, and to which the specific name of *xanthornoides* of Lesson ought probably to be restricted.

I am confirmed in this view by Le Vaillant's account of the South-African species, in which he makes no allusion to a yellow shoulder-spot, but says, "Elle a le plumage absolument noir, mais d'un noir très-lustré * * * la femelle est plus petite que le mâle, et son noir est moins lustré."—J. H. G.]

230. Dicrurus ludwigi, Smith. Ludwig's Drongo.

Male. Iris dark scarlet; bill black. This species appears to frequent more dense bush than is the case with *Dicrurus musicus*, and is never seen (like its congener) to frequent the grass-fires. It is a less plentiful species than *D. musicus*, and its notes are neither so harsh nor so loud.

[It may be proper to remark that the male specimen figured in Sir A. Smith's 'Zoology of South Africa' is there described as having the "bill, legs, and claws reddish black, eyes deep brown."—J. H. G.]

231. Laniarius boulboul (Lath.). Boulboul-Shrike.

These birds are almost invariably seen in pairs; they frequent the dense bush, and are, I believe, equally distributed throughout the colony. Their notes are loud and curious: the male calls first, and is so immediately answered by the female that any one not acquainted with the fact would suppose all the notes to be uttered by the same bird. This Shrike builds a coarse, open nest in a low bush or tree.

[A similar but somewhat more detailed account of the singular call-notes of this species is given by Le Vaillant (vol. ii. p. 76).—J. H. G.]

232. Telephonus bacbakiri, Vieill. Bacbakiri Shrike.

Male. Iris dusky; bill black; tarsi and feet dusky ash; gullet, gape, and tongue black.

These birds are common amongst the hedges on the outskirts of the town of Pieter-Maritzburg; in fact, I have seen them nowhere else, although I have shot over all the surrounding country. They hop about in the gardens in search of insects, much as a Thrush would do. Their notes are peculiarly loud and clear, and are chiefly heard at break of day, when they mount the nearest bush or tree to catch the first rays of the sun: at other times they are generally silent.

233. SYCOBIUS BICOLOR, Vieill. Solitary Weaver-bird.

Female. Iris dark hazel; bill bluish ash-colour; tarsi and feet dusky pale.

These birds frequent the dense bush, and are found either singly or in pairs; their notes are harsh and very unmusical, their ordinary song resembling the squeaking of a wheel wanting grease. They are fond of climbing and hanging about thick creepers and the foliage of trees, in search of insects, much as some of the Barbets do, which birds they seem to me somewhat to resemble. The nest is hung from the tip of some bough in the thick bush; it is built in the form of a retort with the neck hanging downwards, and is composed of the tendrils of vines.

234. ESTRELDA RUBRICATA, Licht. Ruddy Finch.

Male. Iris dusky; bill and upper mandible ashy black; under mandible ashy, but pink at the base; tarsi and feet dusky.

These Finches are generally found in pairs, and never congregate like *Estrelda astrild.* Their food consists of grass-seeds; they frequent rough high grass, hedgerows, and low underwood at the edges of the dense bush. Their nest is generally placed a foot or two from the ground, supported amongst coarse grass; in shape it much resembles that of *Estrelda astrild,* but is built of coarser materials and lined with feathers; the eggs are of a pure white, and from four to six in number.

235. ESTRELDA SANGUINOLENTA, Temm. Sanguineous Finch.

Male. Iris scarlet; bill scarlet, but with the gonys and culmen black; tarsi and feet dusky.

I found a flight of these tiny Finches feeding in some cultivated grounds near Maritzburg in July; they were the first I have seen of this species. The plumage of the female was, I think, duller than that of the male.

236. Poliospiza gularis, Smith. Streaky-headed Sparrow.

Male. Iris hazel; bill and upper mandible light brown; under mandible pale; tarsi and feet very light brown.

I found two pairs of these birds about ten miles inland. One pair had built a nest in a low tree on the top of a very exposed hill; the other pair had built in the valley below, and had young ones in the month of December.

The nests were open, but compact, with much downy substance about them. The sexes resemble each other in size and plumage.

237. Calandrella cinerea (Vieill.): Le Vaill. Ois. d'Afr. pl. 199. *C. ruficeps,* Brehm. Lesser Rufous-headed Lark.

Male. Iris dusky; bill nearly black; base of under mandible pale; tarsi and feet dusky.

I found a pair of these birds near Maritzburg, and shot the specimen sent; they were running about over some ploughed ground in search of food. The stomach of this specimen contained seeds and small pebbles. They are the only examples of this species which I have seen.

238. Barbatula minuta, Temm. Little Tinker Barbet.

Male. Iris very dark brown; bill black; tongue very thin, flat, and horny; tarsi and feet dark greenish ash. The note of this curious little bird so much resembles the tapping of a hammer on an anvil (having that peculiar metallic ring), that it is called in Natal the Tinker-bird. It is silent during the winter months, commencing its monotonous cry in the spring, and continuing it throughout the summer.

They are numerous, but not easily seen, in consequence of their small size, and their habit of sitting quietly on the tops of thick bushy trees. When in search of food, they climb and creep about the thick foliage of trees. They inhabit the coast bush, being seldom found ten miles inland: those which I have seen at that distance from the coast were silent. The stomach of the specimen sent contained mulberries.

239. Dendrobates griseocephalus (Bodd.). Olive-coloured Woodpecker.

Male. Iris very dark; bill, upper mandible bluish black, under mandible whitish in the centre; tongue long, vermiform, horny, and barbed at the tip; tarsi and feet greenish ash.

This Woodpecker is decidedly scarcer than either *Dendrobates fulviscapus* or *Dendromus smithii*. It frequents the dense bush, both on the coast and inland, and occurs either singly or in pairs. The stomach of the specimen sent contained white grubs.

240. COLUMBA DELEGORGII, Verreaux. Delegorgue's Pigeon.

Male. Iris dark brown; bill ash; bare skin round the eye, and also the tarsi and feet, dark pink.

This bird was shot in November, and is the only one I have at present seen. The stomach contained the frothy larvæ of a small species of *Cicada* which is found here plentifully on the tops of trees.

241. FRANCOLINUS LEVAILLANTII, Temm. Le Vaillant's Francolin.

Female. Iris hazel; bill dusky yellow at the base; tarsi and feet dull yellow. These birds are scarce on the coast, but more plentiful in the inland districts. They frequently lie exceedingly close, and it requires a very good dog to find them. They are mostly found in small coveys, and are very good eating. Their call, which is generally uttered morning and evening, is harsh and loud. They frequent high grass and other good covert, and rise with a loud burr. Their flight is rapid and strong, and they generally manage to settle out of sight, behind some hillock or bush, where they are not easily found a second time. Their food consists of berries, fruits, seeds, and insects.

[Mr. Layard, the Curator of the South-African Museum, in a paper recently published, makes the following remark with reference to this species:—"It is a swamp bird, literally dwelling in water-covered grounds. I have shot them and Snipes with alternate barrels, standing up to my knees in water." *Vide* 'Field' newspaper, 21st May, 1864.—J. H. G.]

242. GLAREOLA NORDMANNI, Fisch. Nordmann's Pratincole.

[Sent from Natal by Mr. Ayres, but without any accompanying particulars.—J. H. G.]

243. STREPSILAS INTERPRES, Linn. Turnstone.

Female. Bill black; tarsi and feet bright orange-red. There is under the skin a curious formation of flesh, between and around the eyes. This bird frequents the sea-shore.

244. GRUS CARUNCULATA, Gmel. Caffre Crane.

Iris orange-yellow; bill light reddish brown; bare warty skin at the base of the bill dull red; thighs, tarsi, and feet black.

The Caffre Cranes are plentiful inland, but are seldom, if ever, seen on the coast. They may be found on the open plains, sometimes singly, at other times twenty or thirty in a flight. They appear to feed on grain and insects, preferring the former when attainable. They fly with neck and legs outstretched, the beat of their wings being very quick, considering the size of the bird; and during their flight, if in sufficient numbers, they form the usual letter V, like Swans and Geese.

245. GALLINAGO NIGRIPENNIS, Bon. South-African Snipe.

Male. Iris brown; bill dark brown; tarsi and feet dull yellowish green. This Snipe was killed inland. Its flight was precisely like that of the common English Snipe. Its stomach contained small insects and pebbles.

246. FULIGULA BRUNNEA, Eyton. Brown Pochard.

Female. Iris very dark hazel; bill ash-colour, dusky at the base; tarsi and feet dark ash-colour. Shot in November on the Sea-cow Lake.

247. PRION BANKSII (Smith). Banks's Petrel.

Female. Iris dark blue; bill dark ash or slate-colour. Many hundreds of these birds were cast ashore here dead in August 1862. Those which I saw were much emaciated, having evidently been weakened by want of food, and thus rendered unable to fly or to combat the stormy seas, and at length dying from sheer exhaustion. Now and then one was cast ashore alive, but died soon afterwards.

248. PHALACROCORAX CAPENSIS, Sparrm. Cape Cormorant.

Male. Iris bluish white; bill pale, dusky on the ridge; tarsi and feet black. Thousands of these Cormorants appeared on the coast and in our bay at the latter end of the year 1862, but, I think, did not remain more than a month. I am told that the coolies went with sacks at night and caught numbers on the rocks, at the bluff where they roosted.

The sexes in this species do not differ in size or plumage.

[The following notes and remarks relate to species which have been included in my previous lists of Natal birds.—J. H. G.]

SPIZAËTUS SPILOGASTER, Du Bus. *Spizaëtus zonurus,* Müller. *Spizaëtus ayresii,* Gurney. Ayres's Hawk-Eagle.

[The Natal department of the International Exhibition of 1862 contained an adult, or nearly adult, male of *Spizaëtus spilogaster,* which was subsequently presented to the Norwich Museum, through the liberality of my friend Dr. R. J. Mann, of Natal. This specimen has a small occipital crest, which is certainly but seldom developed in the ordinary plumage of this species, but which much resembles that of the individual described by me in the 'Ibis' (1862, p. 150) under the name of *Spizaëtus ayresii.* I have subsequently seen three other specimens of this Hawk-Eagle, in different stages of plumage, procured by the late Dr. Dickinson in the Zambesi country, and described by Dr. Sclater in the present Number of the 'Ibis.' A comparison of these specimens with the two Natal birds in the Norwich Museum has convinced me that the bird named by me *Spizaëtus ayresii* is in reality the immature state of *Spizaëtus spilogaster*; and that the presence or absence of an occipital crest is simply accidental in individuals of this species, and does not denote a specific distinction.

This Hawk-Eagle is evidently very closely allied to the Bonelli's Eagle, *Nisaëtus fasciatus* (Vieillot), to which it bears an especial resemblance in the character of the changes of its plumage, from the immature to the adult state.—J. H. G.]

AVICIDA VERREAUXII, Lafr. South African Pern.

Female adult. Iris light yellow; bill black; under mandible bluish at the base, cere light yellow; tarsi and feet yellow. Stomach contained remains of a green *Mantis,* of locusts, and of a Chameleon.

[This species was included by me in a former list of Natal birds under the name of *Avicida cuculoides* of Swainson, my impression being that the West-African and South-African races were identical. I have never had an opportunity of seeing the West-African bird; but I observe that Dr. Hartlaub, in his work on the Birds of West Africa, treats it as distinct from the present race, to which he applies the specific term which, in deference to his high authority, I have above adopted. In Dr. Hartlaub's work on the 'Birds of Madagascar,' he quotes *Pernis madagascariensis* of Smith as a synonym of *Avicida verreauxii*; but this I find, by inspection of a specimen brought from Madagascar and referred to in the 'Ibis,' 1863, p. 177, is an error. The Madagascar bird is an *Avicida*, but differs from that found in Natal in having a larger bill and broader tail-feathers. The Madagascar specimen which I examined was apparently immature; the colouring of its plumage much resembled that of the Natal species in its immature state.—J. H. G.]

ASTUR MELANOLEUCUS, Smith. Black-and-White Goshawk.

Male, immature. Iris light dusky brown; bill dusky bluish at the tip, cere yellowish green; tarsi and feet pale yellow. This bird was caught alive in a hedge in Pieter-Maritzburg; its stomach contained rats.

[The above-named specimen is a very young one, and, from the quantity of down adhering to its feathers, would appear to have quitted the nest prematurely. The colouring of its plumage much resembles that of a rufous-coloured individual of the young of *A. palumbarius*. In the adult state, both sexes of this bird are sometimes found with the lower parts white, and sometimes with the whole lower surface black. Mr. Ayres, who has sent me both forms from Natal (where, however, the white-breasted appears to be much the commoner of the two), considers them as distinct species; and this view is strongly supported by Professor Schlegel, who, in his recent work on the Birds of the Leyden Museum, even places the two races in distinct genera, considering the black-breasted to be an *Astur*, and the white-breasted a *Nisus* (*vide* 'Muséum des Pays-Bas,' *Astures*, pp. 15 and 37). Dr. Hartlaub, on the contrary, in his work on the Birds of West Africa, treats the white-breasted birds as being in a second or intermediate plumage, and the black-breasted as specimens of the same species when fully adult. I have myself very little doubt of the specific identity of the two forms, though further observation is required to place the matter on a perfectly clear footing. There can, I think, be no doubt that it was a white-breasted individual of this species which was mistaken by Le Vaillant, when seen by him on the wing, for a specimen of *Circus melanoleucus* (*vide* 'Ois. d'Afrique,' vol. i. p. 135).—J. H. G.]

PHASMOPTYNX CAPENSIS, Smith. African Short-eared Owl.

These Owls appear to me to be more numerous inland than on the coast, frequenting marshy ground in open country. Their flight is very noisless. If disturbed, they fly but a short distance, and then alight again.

NECTARINIA COLLARIS, Vieill. Little Blue-banded Sun-bird.

Male. Iris dark; tarsi and feet black. These birds are decidedly scarce, though found throughout Natal. Small insects appear to form their principal diet. The females seem much to outnumber the males; I have sometimes seen four or five females accompanied by one male.

DICRURUS MUSICUS, Vieill. Musical Drongo.

Male. Iris dark red; bill, tarsi, and feet black. These birds are plentiful throughout the coast districts, and are generally found in pairs, excepting during the winter months, when they hasten from fire to fire as the grass is burnt, and take insects on the wing as they are driven out; in fact, I have frequently seen them dart through the densest smoke in their eagerness to seize some coveted morsel. They are intrepid little birds, attacking without hesitation the largest Raptores; and they are especially fond of bullying any unlucky Owl or strange bird that attracts their notice, rising quickly and repeatedly in the air, and darting upon the back of, or making feints at, the object of their aversion, at the same time uttering loud and harsh notes of alarm or defiance, and spreading and shutting the tail very quickly, which has a curious appearance. Many small birds collect at once to add their voices to the hubbub, until they fairly worry their victim away. These Drongos appear particularly fond of bees, feeding on scarcely anything else when these are plentiful; so that a few of them would soon clear a hive. They generally take up a position on a dead bough of any convenient tree, and dart from thence upon insects as they pass. Their ordinary flight is of a dipping character.

COLIUS STRIATUS, Gmel. Striated Coly.

These Colies are always found in small companies, excepting during the time of breeding. They inhabit the bush, and are fond of climbing about and sunning themselves on any trees well covered with thick creeping plants. They are destructive in a garden, attacking soft fruits, such as loquats, &c. I rather think that when roosting they hang with their heads downwards, the whole family being nestled together; but those I have seen have generally flown off so quickly that I could not be positively certain as to their position.

COLUMBA TRIGONIGERA, Wagl. Roussard Pigeon.

Male. The iris is double, the outer ring red, the inner tawny; bill black; bare skin round the eye dark lake-red; tarsi and feet dull red. During the winter months these Pigeons assemble in considerable flights and feed on the cultivated grounds and farms inland, picking up the Indian corn and other grain that has fallen to the ground.

They are numerous in the environs of Maritzburg, and afford very good sport, the early morning being the best time to get them; they are very good eating. Their note is much the same as that of the common tame Pigeon. They are sometimes found on the coast, but not plentifully.

PERISTERA TYMPANISTRIA, Temm. Tambourine Dove.

Male. Iris hazel; bill dark purple; tarsi and feet deep pink. These pretty Doves inhabit the bushy country on the coast-line, gradually becoming scarcer as we proceed inland. Their note is a soft and melancholy *coo-coo,* uttered slowly at first, then gradually more and more quickly, until at last it ends in a prolonged rattle. They feed on the seeds of trees that drop on the ground (such as those of the castor-oil plant, which is indigenous here), and they may be seen actively running about in search of such food. Their flight is exceedingly rapid; they are found singly or in pairs, but never in companies.

EUPODOTIS CAFFRA, Licht. Stanley Bustard.

Male. Iris light hazel; bill, upper mandible dusky, under yellowish; tarsi and feet dingy yellowish white. This specimen weighed in the flesh 20 lbs. It was one of five which I met with, all apparently of the same size or thereabouts. It fell dead at a hundred yards, struck by one of Eley's green cartridges.

TOTANUS GLAREOLA (Linn.). Wood Sandpiper.

Female. Iris very dark brown; bill black; nostrils linear; tarsi and feet dingy olive-green. Contents of stomach, insects.

Small inland streamlets and shallow pools seem to be the favourite haunts of these birds; they are found either solitary or in pairs, and rise much like a Snipe, their flight being very rapid.

GALLINAGO MAJOR (Gmel.). Great Snipe.

The females appear to be much more scarce than the males. I should say, eight or ten of the latter to one of the former would be about the proportion. The stomachs of these Snipes contain small insects, soft beetles, &c.

PARRA CAPENSIS, Smith. Lesser African Jacana.

Iris light hazel; bill bright brown; tarsi and feet light greenish brown. The male is precisely similar in size and plumage to the female. I found numbers of these beautiful Jacanas on the Sea-cow Lake. In habits they much resemble the larger kind, running with ease on the weeds which appear on the surface; they are rather shy. If, in searching for food, they happen to approach a large Jacana (*Parra africana*), they are immediately chased away; and as both kinds are plentiful in that locality, and feed all day long, there is constant squabbling amongst them. There is one habit they have which I have not noticed in the other Jacanas, viz. the dipping the head up and down, like some of the smaller Plovers.

[With reference to the concluding observation of Mr. Ayres, it may be worthy of remark that Mr. W. K. Parker, alluding to the anatomical affinities of the genus *Parra*, in the 'Proceedings of the Zoological Society' for 1863 (p. 513), uses the following expressions:—"The Jacanas are essentially Plovers, though they have something of the Rail in them, especially in their skull;

and they are united to the typical forms by other Spur-winged Plovers."—J. H. G.]

GALLINULA PUMILA, Sclater. South African Lesser Water-hen.

All I can ascertain of *Gallinula pumila* is that the last specimen sent was shot at the Umschali Lakes, not many miles this side the Zulu border, and within three or four miles of the coast. The irides were light red, the bill greenish yellow, frontal shield bright red, tarsi and feet drab.

[My friend Mr. C. J. Andersson, to whom I am indebted for a specimen of this rare Gallinule, collected by him in Damaraland, informs me that "it is found sparingly on the Okavango River, is very shy, and lives in thick reeds, like all the rest of the family; its food also is very similar."

The typical specimen of this Gallinule, which was figured in the 'Ibis' for 1859, and which is preserved in the British Museum, is apparently not quite adult, the specimens which I have subsequently received from Mr. Andersson and Mr. Ayres being decidedly darker, and also more olivaceous in their colouring.—J. H. G.]

XXIX.—*Descriptions of four new Species of Formosan Birds; with further Notes on the Ornithology of the Island.* By ROBERT SWINHOE.

Kittacincla auricularis, sp. nov. Pileo alis caudaque æneo-nigris: hujus rectricibus ad apicem, illarum 3, 4, 5, et 6 remigibus externe cinereis: dorso et scapularibus cum pectore griseo-fuscis: uropygio partibusque inferioribus castaneis, ventre tamen dilutiore, axillaribus fere albis: rostro nigro: pedibus pallide carneis. Ante oculos et circa caput utrinque vitta currit alba usque etiam ad auriculares, quæ sunt valde protractæ, unde est extractum nomen specificale. Long. tota 8·7 poll.; alæ 4; caudæ 4·5; tarsi 1·2.

Long, fibrous, white auriculars about one inch in length. Quills of the wing graduated, the sixth being the longest. Tail much graduated, the feathers broad, ending obtusely with mucronate tips; claws well curved for perching; hind toe strong, with strong claw. Bill, along culmen, ·7 in.; from gape to tip, 1·0 in., somewhat broad at the base.

The bill of this bird is proportionately stronger than in the typical *K. macroura*; but in its breadth at the base and in the form of its tail, which is, however, comparatively shorter, it is typical of the subgenus. It is a pity, in my opinion, to unite this natural subgenus to the true *Copsychi*. The *Kittacinclæ* are forest-birds, retiring from the haunts of men; they are distinguished by their pale flesh-coloured legs and more or less developed tails, and show in their two last characters a tendency towards the Mountain-Wagtails (*Henicuri*). They are all sweet songsters. The *Copsychi*, on the other hand, have black legs, are familiar house- and open-country-frequenting birds, and possess but a few notes, which are loud, but not over-melodious.

The second novelty was brought 7th March. It is a Saxicoline form, with the plumage of the *Niltava* Flycatchers. Jerdon (Birds of India) places the group close to that magnificent fellow, *Grandala cœlicolor*. The bird of the Formosan Mountains I have named

Myiomela montium, sp. nov. Cyanea: fronte humerisque cæruleis; macula colli utrinque alba, sub plumis celata: lateribus cum subcaudalium marginibus albicantibus: alis fusconigris, cinerascenti-cæruleo marginatis: cauda nigra, oblique albo fasciata: rostro pedibusque nigris. Long. tota 6·5 poll.; alæ 3·6; caudæ 2·7; tarsi 1·15.

The white spot on each side of the lower neck is only conspicuous when the feathers are disarranged; it is formed by the basal half of the feathers being pure white. The two central feathers of the tail are entirely black; the rest, with portions of their outer webs and shafts, pure white, the outermost having scarcely any; the second, to the extent of an inch, increasing inwardly to the fifth, which is white for about two inches. The feathers bulge, and are somewhat pectinated on the edges of their white portions. The tail is composed of twelve moderate feathers, the two middle ones being nearly double the breadth of the others; the rectrices are slightly graduated, and end in angular mucronate tips. Claws pale, sharp, laterally cultrate, and rather delicate. Fifth quill slightly longer than the sixth, and longest in the wing. Feathers soft and fluffy. This is an extremely curious mountain-form of the *Sylviadæ*, combining many of the characters of *Calliope, Ianthia, Larvivora, Pratincola,* &c., with those of the Blue Flycatchers, *Niltava, Hypothymis,* &c. It is closely allied to *M. leucura,* Hodgs. (see Jerdon, *op. cit.* vol. ii. p. 118), but wants the blue eye-streak, and has a shorter and differently marked white and black tail. Jerdon notes a third species, *M. diana,* from Pegu.

The third and fourth novelties were brought down on the 15th March; they belong to the families *Muscicapidæ* and *Turdidæ* respectively.

Cyornis vivida, sp. nov. ♂. Lazulino-cærulea, purpureo lavata: fronte, regione carpali et præsertim uropygio vividioribus: naribus, genis mentoque nigris: alis intus cum cauda nigris, illis externe cyaneis, hujus rectricibus duabus mediis (rachidibus exceptis) et alis extus cæruleis: subtus castanea, plumis quibusdam lateralibus et abdominalibus interne albis: rostro pedibusque nigris. Long. tota 6 poll.; alæ 3·3; caudæ 3·9; tarsi ·7.

Hab. in montibus ins. Formos.

First quill small; fourth longest in wing. Tail of twelve graduated feathers, with obtuse mucronate tips; the outer ones about half an inch shorter than the two central, which are 0·2 in. longer than the rest, and are narrower, with the shafts more median, the feathers narrowing and ending in blunt tips. Claws rather curved, and laterally cultrate. Some of the feathers of the abdomen and flanks white, with buff tips, the white not showing unless the feathers are disturbed.

This species seems to be the Formosan representative of the Himalayan *Cyornis rubeculoides,* Vigors (Jerdon, Birds of India, vol. i. p. 466), from which it differs in its rather larger size and more vivid colouring, in the intense brightness of its blue rump, and in having the chestnut-buff of the breast diffused over the rest of the lower parts.

Turdus albiceps, sp. nov. ♂. Capite toto albo: partibus superioribus cum pectore et axillaribus olivaceo-nigris: partibus inferioribus castaneis, lateraliter olivaceis: crisso albo, nigro castaneoque guttato: rostro pedibusque aurantiacis. Long. tota 8·8 poll.; alæ 4·9; caudæ 3·3.

The tail contains twelve nearly equal feathers, ending in mucronate tips. Tarsi 1·2 in.; claws not much curved, laterally cultrate. Three male specimens varied in length of wing, measuring respectively 4·9 in., 4·7, 4·6. The bills of all are a fine orange; their legs and claws more dingy, and washed with yellow. In one the vent was white, in the other two light chestnut, all spotted and broadly edged with black and chestnut. The rictal bristles are pure white. The tips of some of the coronal feathers are a little sullied, and in one specimen the throat has a few arrowhead black spots. A few white filaments, about half an inch long, extend from the white nuchal edge over the black of the back. On the carpal edge of wing a tubercle or wart is rather conspicuous. It occurs, I find, though smaller, in the Formosan *Oreocincla* and in *Turdus daulias*, also in a still lesser degree in the *Garrulaces*, and probably in most other species of this group. It is, of course, an abortive wing-spur, which in *Turdus dactylopterus*, Bp., of Syria appears to have acquired a full development.

From Jerdon's description (vol. i. p. 527) of *Merula castanea*, Gould, I think our bird is most nearly affine to that species: its black upper coloration seems to supply a link between that bird and the true Meruline type. It has also some characters drawing it close to the *Geocichlæ*.

I have, through the successful *chasse* of a friend, lately procured two pairs of Spoonbills, which it is incumbent on me to describe at some length, as the authors of the 'Fauna Japonica' established the two species *Platalea major* and *P. minor* on quite immature individuals.

(1.) *Platalea*, ♀ (shot, 7th March, in Tamsuy harbour). Length 33 inches; wing 15; tail 5; bill, from base of frontal feathers to tip, 7·5; bare tibia 3; tarsi 5·5; mid-toe and claw 3·8. Bill flesh-coloured, mottled with blackish on the edge of lower mandible, and along the upper mandible as far as spatule. Inside of bill and mouth flesh-coloured. Bare face-skin flesh-coloured, more or less tinged with yellow. Occipital feathers somewhat elongated. Plumage white, except part of some outer quills, the shafts of the quills, and of a few other wing-feathers, which are a faded blackish brown. Legs purplish black. Irides yellowish brown.

(2.) *Platalea*, ♂ (paired with the foregoing, and shot same date). Length 31 in.; wing 13; tail 4·5; bill, from base of frontal feathers, 7·2, and broader than in (1); bare tibia 2·4; tarsi 4·7; mid-toe and claw 3·6. Bill dark fleshy purple, ashy blue along the furrow, and freckled and washed with the same on the spatule. Sides of gonys and rest of the upper surface of the upper mandible mottled with dull black, the mottling coalescing on the base of upper mandible. Inside of the mandibles pale flesh-coloured, tinged with purple, blacker in the mouth; naked face-skin purple-black. Occipital feathers somewhat elongated. Plumage white; the quills with less black than in no. (1). Legs purplish black. Irides yellowish brown.

The shape and colour of the bills of the above two birds were so dissimilar, as also the colour of the face-skin and the gular pouch of no. (1) running to an angle inwardly, while that of (2) had the feathered skin encroaching angularly upon it, that, when the specimens were first brought to me, I exclaimed, in delight, "Behold a solution of the Platalean riddle!—*P. major* and *P. minor* of the 'Fauna Japonica' are one and the same species." I dissected the specimens, established their sexes, drew out descriptions, and thought I had done a service to science. But my triumph was not of long duration; for, just ten days after, my friend brought in another pair of Spoonbills, the sight of which quite upset all my conclusions, and nearly drove me mad. The female of the former pair was the larger; the female of this latter pair was the smaller, and appeared almost identical with the male of the former pair, while the last male had a deeply corrugated and variegated bill, blood-red eyes, and a long crest *in quill*, and was *entirely* white. But, to treat the matter scientifically, we will describe this interesting couple.

(3.) *Platalea*, ♀ (shot, 17th March, in Tamsuy harbour). Length 31·5 in.; wing 14; tail 5, of 12 feathers; bill, from base of frontal feathers, 7·5; bare tibia 3; tarse 5; middle toe and claw 3·7. Bill flesh-coloured, longitudinally streaked and speckled with blackish, and mottled and freckled with slate-colour, chiefly about the spatule, the furrow being slate-colour. Bill not quite so dark as that of (2). Bare face-skin dull purplish brown. Inside of bill as in (2). Occipital feathers somewhat elongated. Plumage white; the external quills and shafts of most of the rectrices being black. Legs purplish black. Irides yellowish brown.

(4.) *Platalea*, ♂ (paired with the foregoing, and shot same date). Length 31·5 in.; wing 14·2; tail 5, of 12 equal feathers; bill, to base of frontal feathers, 7·8; bare tibia 3·5; tarse 5; middle toe and claw 3·5. Bill slate-colour, transversely barred with black, the bars broken and disconnected on the spatule; apical edge black, succeeded by a patch and scattered spots of orange-ochre over the spatule, which is also freckled with light slate-colour. Inside of mouth deep indigo-black. Inside of nostrils ochreous. Sides of upper and lower mandibles deeply corrugated transversely, the corrugæ being black; inner edge of lower mandible with roundish corrugæ, like flattened tubercles. Bare face-skin black, with a bright yellow-ochre patch before the eye, extending over the under lid and in a thin line over the upper lid. Occipital crest long, but not fully developed, being still partially in quill. Entire plumage pure white. Legs purplish black, rather darker than in (3). Irides blood-red.

Now it will be observed that in both pairs the female was the most undeveloped bird. Must we suppose that in each case she was the younger, and that either the male, having but his first mate, was obliged to put up with a junior in age, or that Spoonbill bachelors are partial to females younger than themselves? On the contrary, it strikes me that Spoonbills, like Orioles and many other land-birds, and probably also many water-birds, are slower in the development of the female than in that of the male. The autumnal plumage of the young male in his first year would doubtless be that of the female (1). By the close of winter he would have developed to the stage in which we found him (2), while the female still retained her first garb (1). In the spring of the second year we find the female advanced to the appearance of the male of the first spring (3), and the male fully developed (4). In the third spring the female would probably have a corrugated bill, and be almost or quite identical with the old male. At least, there appear to be no valid reasons why we should doubt of her ever arriving to the same stage of development as the male.

Next we will proceed to compare our four birds with the specimens described as *P. major* and *P. minor* in the 'Fauna Japonica.' The single individuals from which the characters are therein drawn are both young specimens—certainly not older than the second year, if so old. For of the first we find it stated (*l. c.* p. 119) that "son bec est absolument dépourvu de rides à sa face supérieure;" and also "son plumage est d'un blanc uniforme, à l'exception des pointes des grandes rémiges où le blanc passe au brun-foncé; cette même teinte occupe aussi les tiges de ces pennes;"—and of the *P. minor* (p. 120), "quoique absolument semblable à la précédente par ses teintes et son organisation en général, cette espèce nouvelle s'en distingue néanmoins, au premier coup d'œil, par sa petite taille, par son bec assez court, ainsi que par une disposition très-différente des parties nues de la tête."

The dimensions of our four specimens compared with those described in the 'Fauna Japonica' give the following results:—

P. major, F. J.	Length 33·0;	wing 14·2;	tail 4·5;	bill 8·7;	tibia 3·7;	tarse 5·5
No. (1)	„ 33·0;	„ 15·0;	„ 5·0;	„ 7·5;	„ 3·0;	„ 5·5
No. (2)	„ 31·0;	„ 13·0;	„ 4·5;	„ 7·2;	„ 2·4;	„ 4·7
No. (3)	„ 31·5;	„ 14·0;	„ 4·5;	„ 7·5;	„ 3·0;	„ 5·0
No. (4)	„ 31·5;	„ 14·2;	„ 5·0;	„ 7·8;	„ 3·5;	„ 5·0
P. minor, F. J.	„ 25·0;	„ 12·7;	„	„ 6·1;	„ 2·3;	„ 4·0

From this it will be seen that the larger species varies much in size, the smallest exceeding the type of *P. minor* by 6 in. in length, by 1·1 in length of bill, and by ·7 in length of tarse. Let us now compare the disposition of the bare face-skin in our several specimens with the published descriptions.

(1.) ♀. Round the eye bare. The frontal plumes advance ·4 in. before the exterior plane of eye. The plumed skin advances below the eye ·6 in. beyond its exterior plane on to the lower mandible, ending obtusely beyond the plane of the commissure; then receding downwards and inwards 1·5, exposes the gular pouch without readvancing.

(2.) ♂. Round the eye bare. The plumes advance on the forehead about ·1 in. beyond the eye; towards the commissure they fall short of the exterior plane of the eye, and recede only ·2;

then advance ·8 on to the centre of the pouch, and terminate in an imperfect angle.

(3.) ♀. Round the eye bare. The plumes advance on the forehead to about ·3 in. beyond exterior plane of eye towards the commissure only slightly in advance of the eye; they then recede inwards and downwards ·5, and, forming inwardly an angle of about 80°, advance on to the gular pouch about ·8, terminating in an angle of 45°.

(4.) ♂. Round the eye bare. The plumes advance on the forehead to just over the middle of the eye, form an obtuse angle towards the commissure in about the same plane, and then recede well clear of the lower jaw, advancing again on to the gular pouch ·6, and terminating in its centre in an undetermined angle.

Of *P. major* we read (*l. c.*), "tour de l'œil et région des freins nus. La partie emplumée du front formant par devant une ligne convexe, et dépassant l'œil de six lignes. Les plumes des joues s'avancent vers la base de la mandibule inférieure jusqu'au delà de l'angle de la bouche, et celles du bas du cou se prolongent jusque sous l'aplomb de l'œil, en formant sur la peau nue de la gorge un angle aigu."

In the frontal plumes this description of *P. major* closely agrees with our (1), but in that of the gular plumes with our (2); I suppose, therefore, it is the intermediate plumage.

In *P. minor* the feathered forehead, it is said, is "un peu échancré par devant, et ne dépassant guère le bord antérieur de l'œil." So far it would agree with our (2). But "la partie emplumée des joues ne s'avance que jusque sous le bord postérieur de l'œil." This last shows a greater expansion of bare skin than in our most developed (4). I suppose therefore, for the present at least, we must allow *P. minor* to enjoy its rank as a species, and take to ourselves the merit of only having discovered the mature development of *P. major*.

The rectrices in our bird number 12, and are of equal length. The tertiary quills extend to the end of the primaries.

Now for a few facts brought to light by dissection.

(1.) ♀. Ovary minute. Stomach nearly empty, containing exuviæ of Crustacea, small fragments of drift-wood, and morsels of shells. Layers of fat over the abdomen. Trachea simple, with close-set rings.

(2.) ♂. Testes small and dark. Proventriculus long and thickly granulated. Stomach large and soft, nearly empty, containing remains similar to (1). Both birds were shot at noon, and had digested all the morning meal. Cæca small and roundish, about ·4 in. long, and placed about 3 in. from anus. Trachea similar to that of (1).

(3.) ♀. Ovary moderately developed. Stomach nearly empty, containing one sea-weed ovule, two small empty bivalve mollusks, and a few fragments of shell. Trachea as in (2) and (1).

(4.) ♂. Testes large, about ·7 in. long, and oval. Stomach only containing bits of the elytra of the salt-water *Dytiscus*. This and (3) were also shot about noon. The trachea of this old male is convoluted. After entering the thorax, it turns upwards sharply, runs parallel to the neck and its main length for 3 inches, bends upwards and runs again towards the thorax, passes the first convolution, and terminates in the bronchial tubes. The almost uniform width of the trachea is about ·5 in., the rings being entire and set far apart. The trachea of the female (3) is of the same width, but the rings are much narrower and more closely set. The bronchial tubes of the female are shorter, weaker, and narrower.

This peculiar formation of the trachea may be peculiar to the mature male, but we have not sufficient grounds for coming to that conclusion.

The sternum of the *Platalea* appears to bear a closer relation to those of *Numenius* and the *Totani* than it does to that of the *Ardeidæ*, having two open foramina on each side. The sternum of the female (1) is larger than that of the male (2), with the anterior edge of the keel more advancing; the foramina are more deeply cleft, the scapulars shorter, and its whole structure weaker than in that of the male, which, though smaller in stature, has a robuster body.

The sternum of the female (3) has a deeper and more rounded keel than that of the old male (4). Its foramina are wider, but not so deeply cleft. It is shorter in entire length. The scapulars are broader and slightly longer. The coracoids are broader; the furculum narrower and weaker. The chest is more expanded, and pierced with more air-holes; and the whole structure is less compact, and tighter.

There appears to be no marked difference between the male and female sterna, except that attributable to age.

Tongue short and triangular, edged on the interior convex margin with papillæ. Cleft of palate more sparsely edged with papillæ, which are drawn on the transverse ridge at the base of the cleft opposable to the base of the tongue.

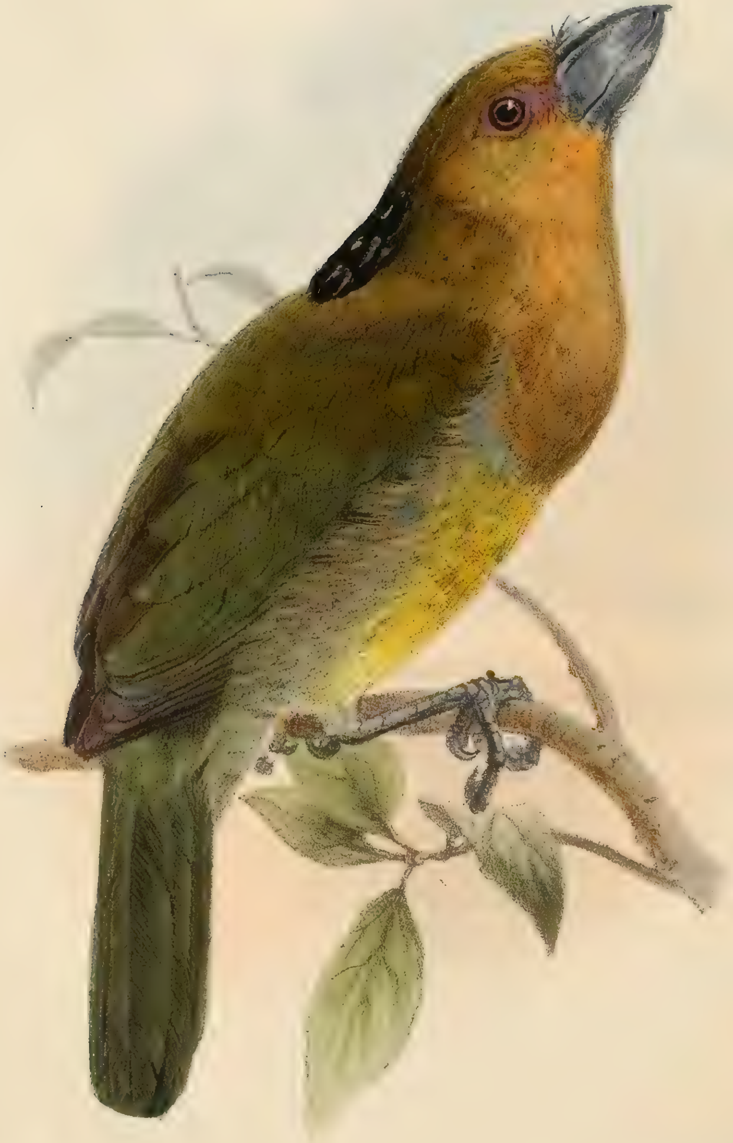
The flesh of this Spoonbill is very palatable.

In the Chinese books on natural history many birds are fabulously described, and of the Spoonbill a wondrous description is given. It is spoken of as a bird with the eyes placed on the top of its head, and as possessing only one wing; so that two birds are obliged to hook on side by side to enable them to rise in the air. It is considered as singular an anomaly among the feathered class as a Plaice is among fishes. The Plaice has also both its eyes on the top of its head, and is reported by the Chinese cabinet naturalists, on account of the apparently unfinished state of its lower surface, to require two to adhere together to form a proper fish, each animal keeping a look-out on its surface-side for the mutual safety of the pair. With this story in their minds, some Chinese *literati* of the place actually desired me to let them have a look at the Spoonbills, wishing to verify their literary researches. I soon confounded the stagnant learning of the Confucian *savans*.

I have to add to my Formosan list two more species, viz. the Painted Snipe (*Rhynchæa sinensis*) and the Bald Coot (*Fulica atra*), both of which were shot last November, at Apes' Hill, S.W. Formosa.

I have perused the description of *Gallinago solitaria*, Hodgs., in the 'Fauna Japonica,' taken from Japanese specimens. This seems to tally well with my *Gallinago megala* from China and Formosa, and may be identical with the true *G. solitaria* of India, of which I have not seen an example. The bird is only met with on our southerly coasts in September and late in spring, and doubtless winters in much lower latitudes.

Tamsuy, Formosa, March 25, 1864.



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M. & N. Hanhart imp.

TETRAGONOPS FRANTZII.

XXX.—*On a new Species of* Tetragonops. By P. L. Sclater, M.A., Ph. D., F.R.S., &c. (Plate X.)

Through the kindness of Prof. Baird, of the Smithsonian Institution, Washington, I am enabled to devote the final plate of this series of 'The Ibis' to the illustration of one of the most interesting novelties that I have met with since I commenced my editorial duties. In former volumes of this Journal I have written upon the American Barbets*, and given a figure of the anomalous form *Tetragonops ramphastinus,* which connects this group with the Toucans. I have now the pleasure of making known to my readers the existence of a second species of the same genus, which has been lately discovered by Dr. A. von Frantzius in the mountains of Costa Rica, and which Prof. Baird proposes to call, after its discoverer,

Tetragonops frantzii, sp. nov. (Pl. X.)

Olivaceus: macula nuchali elongata nitente nigra: capite undique cum cervice, pectore et ventre medio flavido-fulvescentibus: semitorque pectorali utrinque cinereo, medialiter fere obsoleto: ventre imo crissoque olivaceis, medialiter flavicantibus: rostro plumbeo, apice pallido: pedibus nigris.

Long. tota 7·4 poll., alæ 3·4, caudæ 2·3, rostri a rictu 0·8, tarsi 1·0.

Hab. in int. reipubl. Costa Rica.

Mus. Smithsoniano.

The new species of *Tetragonops* is of considerably smaller size than the type species, *Tetragonops ramphastinus,* and so different in colouring that there is no possibility of their being confounded together. In general characters it is not so strongly marked, and is to some extent intermediate between *Capito* and *Tetragonops,* although certainly to be placed in the latter genus.

The bill is relatively as short as in *T. ramphastinus*; the keel between the nostrils is much elevated, and brought to a sharper edge than in the latter, but outside the nostrils is bevelled off at once, instead of being extended into a broad flattened surface. The curious bifurcation of the extremity of the lower mandible exists likewise in the new species.

The wings are short, reaching to about one-third of the distance from the base to the extremity of the tail. The first primary is short (about 1·1 in. in length from insertion); second 0·8 in. longer; fourth and fifth equal and largest; third rather shorter than seventh.

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* See 'Ibis,' 1861, p. 182, and 1862, p. 1.

The tarsi and feet correspond with those of *T. ramphastinus.*

The tail of the single specimen is imperfect, but appears not to differ in form from that of the other species, consisting of ten rectrices, the two outermost of which are half an inch shorter than the medial.

Mr. Osbert Salvin suggests that the specimen may be a female of a more gaudily coloured male; and there are some points in its character, particularly the nearly obsolete grey pectoral band, only showing on each side of the breast, which lead me to think that the opinion may be correct. At present the specimen is unique; but I trust that Dr. A. von Frantzius (who, I believe, is still resident at San José) will before long obtain further examples of this singular bird, and let us know whether there is any distinction between the sexes.

XXXI.—*A Fortnight amongst the Sea-birds of British Honduras.*

By Osbert Salvin, M.A., F.L.S., &c.

At daybreak of the 26th of April, 1862, I reached Belize from Vera Paz, by way of Peten and the Belize river; and finding no schooner in the harbour ready to sail for Yzabal, I seized the opportunity offered for collecting the sea-birds frequenting that part of the coast. It was no easy matter to gather reliable information respecting the haunts of the several species; so after a few short cruises in the neighbourhood, to Spanish Cay, St. George's Cay, Hick's Cay, &c., during which I obtained but a solitary species of Tern and an immature Man-of-war Bird (*Fregata aquila*), I saw at once that, if I wanted to succeed, it would be necessary to look up the birds in their breeding-haunts, and that the further I went, the greater would be my chance of finding them. After some delay, I made arrangements with one Sam Miller, a coloured Creole of Belize, the owner of a small schooner, the 'Mary Ann,' to take me to Lighthouse Reef and Glover's Reef, the outermost atols of the coast, and wherever else I might want to go. We were to be away about a fortnight, part of which time was to be spent on one of the islands on Glover's Reef, where Sam's father lived, owning the cocoa-nuts that grew there. Sam found employment for his schooner in carrying these nuts to Belize. Their value varies: at the time of my visit they were worth 11 dollars per 1000. They are usually exported in the mahogany-vessels, being packed in the vacant spaces between the logs.

I was fortunate in securing the companionship of an American gentleman, Mr. R., then resident in Belize, who joined the expedition, being desirous of initiation in the mysteries of bird-skinning. We had to lay in a small stock of provisions, as fish and cocoa-nuts are all that the Cays produce; this done, we went on board on the afternoon of the 7th of May, and set sail.

Leaving the 'Mary Ann' to make her way with a strong easterly sea breeze towards English Cay, it would be as well to note the positions and forms of the coral-reefs which line the coast. The main features of these reefs are as follows. The Barrier Reef extends along the shore from Ambergris Cay to Ranguana Cay, its most southern point; this last Cay is twenty-five miles from the coast, so that the reef, instead of running more or less parallel to the shore, forms an angle with it, enclosing a long lagoon, which, as well as the reef itself, is studded with numerous groups of Cays. Nearly due east of Belize, outside the Barrier Reef, and separated from it by a deep channel, lies the atol Turneff, within the encircling reef of which several lagoons are included. Eastward of Turneff, and fifteen miles from it, is another atol—Lighthouse Reef, so called from the lighthouse on Half-moon Cay, one of a group of four Cays at its southern end, the names of the other three being Hat Cay, Long Cay, and Saddle Cay: this last is within the atol. The whole group is also called Southern Four Cays, two more Cays at its northern extremity being distinguished as Northern Two Cays. Half-moon Cay is the pilot-station.

A third detached atol lies twenty miles to the southward of Lighthouse Reef, on the eastern margin of which four Cays are situated, viz. Long Cay, Middle Cay, S.W. Cay, and S.W. of all Cay. The rest of the reef consists of a line of breakers, a stranded log or spit of sand every here and there appearing above water.

Though the breeze continued blowing freshly all night, it was too much ahead to enable Sam to make Cay Bokel, a small Cay at the southern end of Turneff; so, after passing out through the channel near English Cay, we had to beat up to the anchorage under the lee of the former island, and it was midnight before we came to anchor. In the mean time Mr. R. and I made ourselves as comfortable for the night as the deck of the schooner would allow, having to change over at every tack. At the first trace of dawn we were glad enough to turn out, and, coffee over (before which one does as little as possible in the tropics), the schooner was again got under weigh, when a tack or two took her through a narrow channel into one of the lagoons of Turneff. Here we just crept along, with scarcely wind enough to fill the sails, but startling the few Pelicans (*Pelecanus fuscus*) that were just waking up and stretching themselves before leaving their roosting-places in the mangrove-trees. Bald-pate Pigeons (*Columba leucocephala*), in small flocks of three and four, flew across the bows just out of shot: otherwise all was quiet, and the prospects of spoils from Turneff were not very promising.

Still Sam said Man-of-war Cay would prove fruitful; so for Man-of-war Cay we steered, the breeze freshening as the morning advanced. Before reaching the Cay in question, we passed into another lagoon, through an opening in the mangroves. A few Shags (*Phalacrocorax floridanus*) now flew round, and I shot several as we came to anchor. There was no lack of birds now; for on our approach a cloud of Man-of-war Birds (*Fregata aquila*) rose and hung over the Cay, like Rooks over a rookery; Shags hurried out of the bushes, their laboured flight contrasting with the apparently effortless hovering of their fellow-colonists (no Eagle flies with the ease of a Man-of-war Bird); and here and there a White Gaulin (*Egretta candidissima*) peered out to see the cause of the commotion. The small canoe or dorey was soon lowered; and taking Joe (Sam's brother) to paddle, we started off for a closer examination. By keeping close to the mangroves on the leeward (W.) side, we were able to reach the Gaulins' nests, which however were mostly deserted, all the young ones of those still inhabited being able to run out along the branches and make their escape. The nests were composed entirely of sticks, and placed near the end of a horizontal bough. With an eye to dinner, we paddled quietly on, while Joe, spear in hand, kept a sharp look-out for fish, a favourite lurking-place for some species being the tangled roots of the mangroves. The Man-of-war Birds, as well as the Gaulins, showed preference for the leeward side, the former occupying the highest mangroves on the island. Old nests and decayed boughs, accumulated on the oozing mud, had made a patch of ground just under where the nests were. For this we paddled, and, on landing, shot four old birds—two adult males in dark metallic chocolate-brown plumage, and two with white underneath, the adult females; no white-headed immature birds were to be seen. These secured and stowed away in the dorey, we began to scale the trees. Joe climbed the first, and found an egg, of which I entreated him to take all possible care. "Treat him kind," shouted I. "Don't be afraid, massa," replied Joe; but Master Joe, on reaching the bottom of the tree, managed to knock the egg against a branch and broke it to bits. "Quite rotten, sar," says Joe, by way of apology. Gladly would I have had a rotten egg to blow, or a chipping shell! But, like the spilt milk, there was no help for it; so, after trying to impress more care on the delinquent Joe, I climbed the next tree myself. It was a curious sight, on thrusting one's head out of the top of a tree, to watch the inhabitants around. Three-fourths of the nests had young birds in them, of various ages: the more advanced were commencing to shoot their scapular feathers; others, younger, looked like puff-balls of pure white; while those which had just escaped from the shell were lying helplessly, as young birds do, on the frail structure of sticks composing their nests. So slight were these, that the young in their earliest infancy must have a perilous time of it. The youngest were guarded by one of the parent-birds, which balanced itself on the edge of the nest. From the unhatched eggs the birds could hardly be prevailed upon to stir. I have several times noticed this reluctance on the part of birds building open nests to leave their eggs exposed to the direct rays of the tropical sun, whereas on cloudy days the same solicitude was not exhibited. In this Journal (Ibis, 1860, p. 264) I gave a short note of the behaviour of a Humming-bird (*Thaumastura henicura*) on this point, and now I was observing quite a parallel case amongst the Man-of-war Birds and Boobies. The former of these birds are ready enough to take wing at other times on approach of danger; and the inherent sluggishness of a Booby would hardly account for their sitting so closely. Certain is it that, after incubation has made some progress, the solicitude of the parent-bird, in both cases, is exactly in proportion to the age of its offspring; and I should suppose that when the chick is just on the point of hatching (the most critical period), heat, and not cold, would prove most prejudicial to its chance of coming into existence*. With other species this danger is in a measure avoided by covered nests and the choice of shady situations.

Cutting my meditations short (for with my head protruding from the top of a tree and a terrific sun beating on me, I was little disposed for a very long investigation), I gathered a few eggs, and left the Man-of-war Birds to return to their young. We then climbed along the matted mangrove roots to the northern end of the Cay, to look for nests of the Shag. We had not to search far, for on reaching the outer mangrove-bushes we could see them on the outer boughs, some 12 feet from the water. The nests were strongly built of sticks, hollowed considerably inside, and partly lined with freshly picked mangrove-leaves. The birds were laying their eggs, and some nests had in them what appeared to be their full complement of four eggs; other nests had three, two, and one. The boat being now loaded, we returned to the schooner and commenced securing the spoils, skinning the birds and blowing the eggs while we were gradually beating up to an opening in the eastern side of the reef, called the Grand Bogue†. Passing out at this channel we stood across for Lighthouse Reef, and sighted Long Cay before dark.

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* When the embryo is still small, we might infer that the albumen with which it is surrounded affords protection against extremes of temperature. This decreases as the embryo increases, necessitating greater care and protection on the part of the parent.

† Evidently a corruption of Boca Grande.

When out on this sort of expedition, sundown is bed-time; so I had turned in on deck with my blanket, and had had a sound sleep, and was just sensible that we were in smooth water again, when a crunch, and an exclamation from Sam, "High and dry!" brought me to my feet. We had run into a reef of coral-rocks, and were held fast. The corals were close to the surface, and Sam and the other two lads jumped overboard and commenced operations to get the schooner off. It was an hour before they succeeded, and in the mean time I fell asleep again.

On the morning of the 9th, after passing round the northern end of Long Cay in order to make the passage into the lagoon of the atol, a tack or two brought us to Saddle Cay—a settlement of Pelicans (*P. fuscus*). Of these there were forty or fifty old and immature birds in about equal numbers; but on landing we could find no trace of nests in the trees in which they are said to build. Sam said that they built in the months of November and December, and that after the young could fly the old birds pulled the nests down. It was a bold Pelican that first perched upon a tree: a bird less adapted to such a resting-place could hardly be imagined. Yet there they sit on the mangrove-boughs for hours, preening their feathers with their long hooked bills, an amusement they seem to take special delight in, all the time keeping their balance with ease, even when a strong wind tries the security of their footing. Others were resting on a spit of sand that runs out from one end of the small Cay, and on the stranded logs, of which plenty lie scattered along the reefs even of the outermost atols, being floated out of every stream during the floods of the wet season; more still were fishing in the shallows. There are few sea-birds more interesting to observe than Pelicans fishing: there is a sort of methodical determination about the way in which they set to work that seems to warrant success; and I have watched them time after time dart down, seldom failing, on coming to the surface, to bolt the fish they have secured. When a bird does miss, a look of disappointment is ludicrously shown by the dejected way in which it hangs down its bill. Four or five usually rise in company, and flying round to get the requisite impetus and height, with neck drawn in and beak slightly depressed, they suddenly, as it were, stop short in the air, and dash, with outstretched neck, into the water upon the shoal of fish, which has perhaps shifted a little from the spot on which the last descent was made. They rest but a moment on the water—only time enough to bolt the prey, which is done by throwing the bill upwards, thus slightly distending the pouch—a ready bag to receive the fish, before held between the mandibles. There were a good many King-birds (*Tyrannus intrepidus*) amongst the shrubby trees that grow on the Cay; and a pair of Ospreys (*Pandion carolinensis*) seemed to belong to the place, though I saw no trace of their old nest. The gregarious habits of the American Osprey, in contradistinction to the solitary pairs usually seen in Europe, have been upheld as an argument for their specific difference. I believe, in neither case does the rule hold: certainly the Central-American bird, common as it is on these coasts, has nothing gregarious in its habits. Few of the Cays of which I am now writing are without a pair, and yet I observed no instance of more than a single pair frequenting one island. On the other hand, in Europe instances occur in which a large number of Ospreys are found within a very limited district; but perhaps in neither case can the Osprey be called gregarious, in the strict sense of the term.

On nearing Saddle Cay we steered straight for Half-Moon Cay, keeping just inside the reef. There were several old trees, with their branches above water, lying stranded in the shallows, upon which a few Terns were sitting; but I left them, as we had a colony of Boobies (*Sula piscator*) to visit, and specimens to collect, which would occupy the whole of our time. It is useless to accumulate too much work in those hot districts: the specimens collected during the day must be skinned before the next, or they are sure to be lost, and the skinning must be thoroughly done, especially in the case of sea-birds, or the specimen will prove of little value. The making up of the skin is of least importance, and time is often lost by too much attention to extra finish.

The northern end of this Cay, which is long, and shaped as its name implies, is occupied by the pilots, who have their houses scattered about under a grove of cocoa-nuts. There are but few mangroves; but the southern portion, as well as nearly the whole windward side, is covered by low "bush." A large colony of Boobies (*Sula piscator*) hold entire possession of this portion of the island, every tree having four or five nests in it. By the time we had made acquaintance with some of the pilots, and had taken a "long drink" of cocoa-nut milk (a luxury after the stale water we had had to put up with on board the schooner), it was mid-day; yet we made our way through the trees to search for Boobies' eggs. The sky was clear, and the heat intense, the sea-breeze not yet blowing with any force, and the foliage not being thick enough to afford much shelter from the scorching rays of the sun. The Boobies, too, seemed affected by the heat, and sat panting with open beaks; some, still more overcome, were resting against a branch, with their heads hanging down, and eyes shut. At first I thought these were dead, but, on stirring them up, succeeded in making them open their eyes; I could not, however, prevail upon them to get up; they only screwed their heads about with a sort of expression that seemed to ask me what I meant. Over many of the nests one of the old birds sat, and in the same trees the fully fledged young still remained. The young were of every age, their plumage including every stage, from the white down of the newly hatched chick to the grey dress of the full-grown. In some few, still older, the white dress of the adult was beginning to show itself. The name Booby is most appropriate; I never saw a bird with less idea of getting out of one's way, or caring less for what one did. Walking about under the trees was nothing; they hardly condescended to look down: nor when we stirred them up while taking a "siesta," pulled their tails, poked them off their nests, and fought with them for their eggs, and bullied them in every way, did we succeed in getting up any sort of excitement in the colony. They took everything with the greatest indifference, with a complaisant, grave expression that was laughable to watch. And yet a Booby is no fool at fishing; rare sport they must have of it, flying at the pace they do, and taking such headers. It was too hot to climb to every nest within reach; and, after trying a few, we found that there was always a chance of an egg in a nest upon which, and not near which, an old bird sat. Even in this way, after a long search, we only secured four rotten eggs. A few Man-of-war Birds breed in the same trees, nearly all of which had eggs. This Booby makes a nest very like the Man-of-war Bird, *i. e.* of twigs rather untidily laid together in a convenient fork in the top of a tree. I could not easily calculate the number of birds in this colony, but there were certainly several thousands. Returning to the cocoa-nut grove, we rested a short time to cool down, and then looked quietly about for small birds, as I had seen several species round the houses. Amongst them I was delighted to find the *Melanoptila glabrirostris*, Scl., a rare and curious form of Mocking-bird, with a uniform glossy blue-black plumage. I had been looking out for it everywhere in Vera Paz, knowing that the first specimens had been obtained in Honduras, but in vain. Besides its rarity, the doubt with which Dr. Sclater referred it to this section of the *Turdidæ* made it a doubly interesting discovery, and I consequently watched it with greater eagerness. It is, I believe, rightly placed, as the habits of the bird agree well with the Mock-bird of the district (which also occurs on the Cays), not only in its actions and flight, but in its sweet though short song. I was too early to obtain its eggs, but a pilot assured me they were blue, which was corroborated by Sam. It goes by the name of the "Georgy Bird" amongst the Creoles. I could only hear of its occurring on the outer Cays, viz. those of Lighthouse and Glover's Reefs. I found, too, another bird new to me (*Dendrœca vieillotii*, Cassin), belonging to the American Warblers. It resembles the common *D. æstiva*, but differs in having a chestnut throat. Two Humming-Birds occur, *Lampornis prevosti* and *Amazillia cinnamomea*; two species of Tyrants, *Tyrannus intrepidus* and *Elainea subpagana*, and the Bald-pate Pigeon (*Columba leucocephala*). I also shot *Euspiza americana*.

They say that these outer Cays, at the time of the autumn migration, swarm with small birds, which stay to rest on their passage. A large Lizard (*Iguana*, sp. ?) abounds on this Cay: one or two may be seen in almost every tree, basking on the branches, or making their escape by scrambling from bough to bough. Small Lizards (*Anolis*, sp.), too, peer at one round the cocoa-nut trees, and, waiting a moment to extend their highly coloured throat-pouches, vanish behind the tree as one approaches too close. The whole afternoon was taken up with skinning a series of the different plumages of the Booby and the few small birds I had secured; but just before sunset I again walked round the island to watch the Boobies returning to roost from their fishing-grounds. They came trooping back in flocks of twenty or thirty, the greater portion from windward, and flying at a dashing pace. They did not settle at once, but kept sailing round and round till after sunset. While watching them, I recognized a single immature bird of the common species (*Sula fiber*), its browner throat enabling me to detect it. I saw no others there, but afterwards at sea several flew round the schooner. Having pretty well finished the day's work, we slung our hammocks in the rigging, and slept soundly till dawn.

May 10th.—Remembering the Terns we had left the previous day about the old snags on the reef, I returned in the schooner to Saddle Cay, shooting a specimen of *Thalasseus acuflavidus* by the way. At Saddle Cay we found a fresh arrival of Terns and Laughing Gulls (*Larus atricilla*). The former all belonged to a second species of Sooty Tern (*Haliplana panaya*). No time had been lost by the Terns, for on searching the Cay we found four eggs had already been laid. A little sand was scratched away for a nest, under such shelter as the bushes that grew nearest the beach afforded. This *Haliplana* is known to the Creoles as the "Rocky Bird." It is a very graceful species, though its flight is rather heavy for a Tern, not having the same dash about it that so strikes one on watching its congener *H. fuliginosa*. The eggs are rather less ruddy and smaller than those of the commoner species, but similar in other respects.

There was nothing more to be done now at Lighthouse Reef beyond replenishing our stock of wood and water, which occupied the remainder of the afternoon. Fresh water, such as it is, may always be obtained on these Cays by digging a hole in the sand some distance from the beach, and then burying a tub with the ends knocked out to keep the sides of the hole from falling in. In the course of a few hours water filters through, which at first has but a slightly brackish flavour. This increases as the water stands, till it becomes too strongly impregnated with salt to drink. The tub is then removed, and buried in another hole. During the dry season, the few people who live on the Cays have no other supply. Of wood we could always find enough from the broken spars, boards, and logs thrown up on the beach.

Rounding the south end of Half-Moon Cay, the schooner passed out into open water, and Sam steered her straight for Glover's Reef. The wind was light, the water lumpy, and the sun intensely hot as we slowly made our way across. I was glad enough when I detected a white line of breakers far ahead. This was the northern end of the reef, towards a gap in which we steered. Passing through this channel, Sam pointed to the spot where the schooner 'Susan' was wrecked, with 300 filibusters on board, some few years ago, as they were sailing to join Walker on the coast of Honduras, for the purpose of attacking Nicaragua, after passing through that republic. This disaster put an end to the expedition for the time, the shipwrecked adventurers being taken back to New Orleans by a British cruiser. The next attempt upon the same point put an end to Walker's career, when he was taken by the 'Icarus,' handed over to the Honduras authorities, and shot. Sam had many a story to tell about them, how he and his brothers had fished up muskets and sold them in Belize, and how a party of the filibusters whilst living on Middle Cay had shot his mother's pigs with their revolvers, and eaten his father's cocoa-nuts. Once inside the reef, there was not much time for talking, as patches of coral-rock studded the lagoon, and the schooner dashing along under the freshening breeze required careful steering.

Middle Cay now stood before us, and, anchoring under the lee of the island, we went ashore with our hammocks, and took possession of an empty hut built out of the wreck of the 'Susan.' There is little variation in all these Cays, one sees the same repetition of cocoa-nut groves and mangrove-swamps, the latter, when present, being usually in the middle of the island. The cocoa-nut trees have most of them been planted by the occupier of the Cay, the "bush" growing on the sandier portions being cleared for the purpose. It is said that in five years a tree produces its first fruit; and that it lives for sixty or more, if not uprooted by a storm. Cocoa-nut growing seems profitable enough, but doubtless has its drawbacks. Fancy undergoing voluntarily a Robinson-Crusoe life for years on an island only large enough to hold yourself and your cocoa-nuts! Yet it suits a tolerably well-to-do negro admirably; he has plenty of opportunity "to cock up his toes, to make the time pass." But I must not be hard upon the inhabitants of Middle Cay; if contentment is a blessing, they were blessed, and they made Mr. R. and myself as comfortable as they could the few days we passed there. Bald-pate Pigeons are common on this Cay, and every evening about sunset I used to bag a few, those not wanted for the collection going as a contribution to the larder. A single Fern (*Acrostichum aureum*) grows on this Cay, the common species of all the lowland swamps of the West Indies. I do not know how many brothers Sam had, in addition to Joe: his big brother Bill, with a bigger schooner than the 'Mary Ann,' was at the Cay, calling for cocoa-nuts. He too worked like Sam with a prospect of a Cay and cocoa-nuts before him. Having to complete his cargo at South-west-of-all Cay, I went with him to visit the colony of Noddies. The distance was short, and all inside the reef. I was prepared to see a good many birds, but nothing approaching the numbers that are there crowded on one small island. Noddies everywhere: Noddies at sea and fishing in the shallows; Noddies in the cocoa-nuts and mangroves; Noddies basking by scores on the sands, and flying through the trees by hundreds. There must have been many thousands in all; and what must the numbers have been when the Sooty Terns flocked to the same island in such numbers that their eggs might be gathered by the basketful? I had hardly put my foot ashore when I discovered there were two species of *Anoüs* on the island, the second species being *A. tenuirostris*, and easily recognized. Instead of the cawing note of the common species, the "Piccary Noddy," as the Creoles call it, has a more Tern-like cry, whence, perhaps, its name. The nest of the Noddy is made of sticks—a large loose structure heaped together at the top of a cocoa-nut tree, or on the outer branches of a mangrove. That of the "Piccary Noddy" is small and compact, made of slender twigs, seaweed, and bits of grass, and glued together in every available fork and on every horizontal branch.

These latter almost exclusively monopolize the high mangroves on the windward side of the island, while the larger species keeps to the cocoa-nuts. Both were as tame as could be, and cared little for my climbing the trees to investigate their domestic arrangements. The eggs of the "Piccary Noddies" were on the point of hatching, whilst those of the Common Noddy were already hatched. Again reverting to the numbers, in one tree there were over seventy nests. The egg of the Piccary Noddy is nearly the counterpart of that of the common species, only smaller, and perhaps more highly marked; but I saw a larger series of the former. It was hot work, indeed, climbing the trees at midday, and the consumption of young cocoa-nuts was considerable; they form an excellent substitute for brackish water, and are certainly more wholesome. So ended our day at South-west-of-all Cay; and so much work had accumulated on our hands that we determined to spend the next in working up arrears, as what with a Pelican and Noddies to skin, and eggs to blow, we had enough to do.

Glover's Reef is a favourite haunt for turtle, and, during the season, nets are constantly set to catch them. Immediately on reaching the Cay, Sam had set ten nets, and we now went in the dorey to see the result. The net is usually about forty or fifty yards long, sometimes more, and about four yards deep. It is made with a very open mesh, often more than a foot square. At one end a log is fastened and anchored with a large stone, along the top runs a row of floats, and at the other end a log cut in the form of a turtle. This acts as a decoy. The turtle, on striking the net, rolls itself up in the meshes, and becomes effectually entangled; the two buoys are drawn together, and the fisherman knows from a distance whether he has been successful or not. We had a lucky morning's sport, and secured two turtles. It requires some dexterity to haul such a heavy brute on board so small a craft; but Sam managed matters well, being ready prepared with a "turtle-peg" to spear the animal, should the net be insecurely wound round it. This peg or spear is so arranged that the barb only can pierce the shell. Returning, we visited Long Cay, a resort of Pelicans. Here I found a few pairs of the Lesser Tern (*Sterna antillarum*) just preparing to lay.

I also added another specimen of *Thalasseus regius* to the collection.

One more day at Middle Cay, and we were again under weigh, standing westward for Southern Water Cay and the main reef. A search on two small Cays (Ellen and Curlew Cays) produced a single specimen of *Haliplana fuliginosa* and a Turnstone (*Strepsilas interpres*). I also gathered a few more eggs of "Noddy" and "Rocky Bird." Leaving Water Cay, where we had anchored for the night, the schooner was steered along the inside of the reef, towards Cay Glory channel, stopping at "Sawpit Cay" and "Tobacco Cay." On the latter was an old Osprey's nest in a dead tree, which looked as if it had been occupied for years, a little being added each year, till the pile of sticks was several feet high. A large flock of *Hydrochelidon fissipes* was seen ahead; but before the schooner could reach them they had worked too far to windward, so I jumped into the dorey, paddled off in pursuit, and succeeded in securing several specimens in all stages of plumage.

My original intention had been now to return to Belize; but I had not seen enough. There were the "Curlews" (*Eudocimus albus*), Spoonbills (*Platalea ajaja*), "Gulls" (*Thalasseus acuflavidus*), and several other species yet to be met with; so I determined upon another round, and steered again for Cay Bokel and Turneff. On the way, three Boobies (*Sula fiber*) flew round, but out of shot. This species is said to breed on Mauger Cay, at the northern end of Turneff, also in great numbers in some of the Cays of Cape Gracias á Dios. I saw but few of them the whole time I was out. Landing on Turneff, I shot another Turnstone and a Bartram's Sandpiper (*Actiturus bartramius*), but was disappointed at not finding the Lesser Terns breeding on a small Cay which Sam said they formerly frequented. A good supply of fish from the reef, which Sam speared whilst I was shooting, made some amends for the delay, as, our stock of provisions falling short, we had to depend upon Sam's dexterity with the spear.

Hat Cay was our next anchorage. It was now the 18th of May, and the dry season and sea-breezes almost at an end. Clouds were hanging over the land, and gathering waterspouts on all sides indicated a coming change. Sam began to talk ominously of a week or so without being able to stir—a pleasant prospect in so hot a place, and with nothing to do! We drifted in a calm all the morning, but afterwards, by the help of a few flaws, managed to gain the inside of the lagoon; then there was occupation enough. The water being like glass, we could see all that was going on beneath us; and a wonderful sight it was—sea-fans waving to and fro, corals of every form growing in fantastic shapes like trees and bowers, showing here and there a rent through which the water looked dark and blue. We were just on the edge of the reef, at one moment looking on this watery garden, and the next over the coral-wall where the growth stopped, and the depth sank suddenly. Grotesque-looking fish, too, were swimming about, some playing amongst the corals, others darting past, pursuing or pursued. A Shark also would swim round, giving one half a shudder, it looked so close. An hour spent thus was sooner gone than in whistling for the wind, and a ripple on the water veiling the vision beneath made us aware that the sea-breeze was not yet beaten. It came, and, blowing all the harder for the delay, carried us along towards Northern Two Cays at a pace that made up for lost time.

Towards the northern end of the lagoon the channel becomes exceedingly intricate, and, in spite of all Sam's care and one of the boys on the look-out to direct him, we were brought up suddenly against a patch of coral—luckily during a lull, or the 'Mary Ann's' timbers must have started; as it was, she was apparently none the worse, being accustomed to such hard knocks. We had to stop and anchor midway, night coming on before we could thread the channel. The visit to Northern Two Cays proved rather a failure: the "Gulls," as they are called (*Thalasseus acuflavidus*), had not yet assembled. A pair of *Dolichonyx oryzivorus* and a Sanderling (*Calidris arenaria*) were added to the collection, the former being an acquisition—the first specimens I had seen in Central America. Near Cockroach Cay a channel opens into the lagoons of Turneff, some miles to the northward of the Grand Bogue. We steered for this point, and on entering the lagoon passed along between the reef and the bank of mangroves,—the atol having, as it were, a double reef, the inner covered with trees, the outer broken here and there with a small island. Looking eastward, I noticed a clear light in the sky, and calling Sam's attention to it, he said it was the reflection of the "white water" of Lighthouse Reef. This appearance arises from the white reflection cast by the breakers and the sandy shallows adjoining. On reaching Grassy Cay, Lesser Terns (*Sterna antillarum*) rose in a cloud as the anchor dropped. Our visit was well timed, as above a hundred pairs had assembled to lay. Numbers of nests were already occupied, each containing one, two, or three eggs; they were simply depressions in the sand scratched out by the bird. A few Roseate Terns (*Sterna paradisea*) also frequented the island, as well as the White Ibis (*Eudocimus albus*) and a Ring-Plover (*Ægialitis wilsonianus*), of which I found two nests. On an adjoining Cay were old nests of the large White Egret (*Herodias egretta*); and skulking amongst the mangroves I saw a "Boat-bill" (*Cancroma cochlearia*). We also came upon some nests of the Ibis in the mangroves, but no eggs. One more day took the schooner through the lagoons of Turneff, across the channel to English Cay, and so back to Belize, bringing one of the pleasantest fortnights I ever enjoyed in Central America to an end. A few days more, and I was again bound for the interior; my spoils for Europe.

XXXII. *Notes on certain Central-American* Laridæ *collected by* Mr. Osbert Salvin *and* Mr. F. Godman. By Elliott Coues, M.A., M.D.

A collection of Central American *Laridæ* having been kindly transmitted to me, at the Smithsonian Institution, for examination, by my friend Mr. O. Salvin, I have made the following identification of its species *.

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* The collection transmitted to the Smithsonian Institution, which Dr. Coues has been so kind as to name, did not include all the species we collected, nor all the specimens. I selected from the whole such a series as would enable me to identify with accuracy the remainder; and only omitted to send three well-known species, viz. *Chroicocephalus atricilla*,

LARINÆ.

1. **Blasipus heermanni**, Bp., ex Cass.

A very young female. It is entirely fuliginous, with no signs of the white head or of the general plumbeous hue of the adults. The bill flesh-coloured, its terminal third black; the feet black; the worn wing-coverts, tertials, and tips of the wings and tail greyish brown.

a. Young ♀, Chiapam, Pacific coast of Guatemala, January 1863; (and several other specimens in similar plumage.—O. S.)

2. **Chroicocephalus cucullatus**, Bruch, ex Licht.

A single immature specimen, identical with the numerous North American examples which have been identified with the *Larus cucullatus* of Professor Lichtenstein by both Mr. Lawrence and myself. There is an incomplete hood; the front and cheeks are mostly white; the bill and feet blackish; none of the characteristic markings of the primaries as yet apparent.

a. Chiapam, Guatemala, January 1863.

3. **Chroicocephalus atricilla**, Linn.: Coues, Proc. Acad. Nat. Sc. Philad. 1862, p. 309.

We have specimens from both coasts,—those from the Atlantic in summer plumage, perfectly or partially assumed; those from Chiapam, on the Pacific, in winter or immature dress. The latter have the tarsus slightly longer, and the bill somewhat stronger, than the former; but these characters, showing variation between individuals from the same locality, are of insufficient value to make any separation of the species justifiable.—O. S.

STERNINÆ.

4. **Thalasseus regius**, Gambel.

The numerous examples of both adult and young are quite identical with the common North American bird.

a, b. Chiapam, January 1863; *c, d*. British Honduras, May 1862 (*a*. adult ♂; *b, c, d*. immature); (and several other specimens.—O. S.)

Haliplana fuliginosa, and *Anous stolidus*. These, in order to render Dr. Coues's notes perfect as far as our collection is concerned, I have ventured to incorporate into his paper.—O. S.

5. **THALASSEUS ELEGANS**, Gambel.

The single specimen is absolutely identical with a typical *T. elegans* from California; but, being an immature or winter example, it entirely wants the rosy hue of the under parts of full-plumaged birds. It is the first specimen I have seen in this condition.

a. San Salvador, December 1862. (Shot by Capt. Dow.—O. S.)

6. **THALASSEUS ACUFLAVIDUS**, Cabot.

The eight specimens are somewhat smaller than the average of North American examples, agreeing in this respect with numerous individuals from the Antilles. All are undoubtedly specifically identical.

a, b. Immature birds, Chiapam, Guatemala, January 1863; (and other specimens.—O. S.)

7. **GELOCHELIDON ANGLICA**, Bp., ex Montag.

Quite identical with numerous North American and European specimens. The single specimen is in full winter plumage. The pileus is only represented by numerous delicate, sharply defined shaft-lines of black, which, on the auriculars, blend into a dusky spot. The forehead is pure white. There is a sharply defined anteocular black lunula.

a. Male, adult, winter plumage, Chiapam, February 1863; and other specimens.

8. **STERNA PARADISEA**, Brünn.

A fine adult example, smaller than the average of North American specimens, but otherwise quite similar.

a. Male, "Grassy Cay," May 20, 1862 (one other specimen. —O. S.).

9. **STERNA** ——— ?

A very young example, which I find it impossible to label with certainty. It is almost exactly like *S. paradisea*; but the upper parts are rather too dark, and the primaries want the most essentially diagnostic character of those of *S. paradisea* (*vide* my "Review of the Terns of North America," in Proc. A. N. S. Philadelphia, December 1862, p. 551). At the same time, the colours of the bill, and some other peculiarities, preclude its definite reference to *S. hirundo*, which it otherwise resembles. It is probably, however, *S. paradisea*; which opinion is strengthened by the fact of there being an adult *S. paradisea* in the collection, but no *S. hirundo*.

a. Very young ♀, San José de Guatemala, December 8, 1862.

10. Sterna forsteri, Nuttall.

An immature bird, in pretty much the plumage figured and described by Audubon under the name of *S. havelli*, and identical with numerous examples of young *S. forsteri* in the Smithsonian Museum.

a. Young ♀, Lake of Dueñas, Guatemala, October 28, 1862.

11. Sterna antillarum, Coues, ex Lesson.

An adult example, identical with numerous North American and Antillean specimens.

a. Adult ♀, Glover's Reef, British Honduras, May 14, 1862; and other specimens.

In Cabanis' 'Journal für Ornithologie,' 1861, p. 346, Dr. Gundlach has recently presented this species under the name of *Sterna superciliaris*, Vieillot; which he considers to be the same as *S. antillarum*, Lesson, and *S. frenata*, Gambel. The impropriety of this identification of Vieillot's name will be, I think, quite palpable from the following considerations:—*Sterna superciliaris*, Vieillot (Enc. Méth. p. 350), is based upon the "Hati ceja blança" of Azara, and is consequently a South American bird. Now Vieillot's description, though brief and somewhat vague, unquestionably refers to some species, in immature plumage, of the subgenus *Sternula*, i. e. a small species, like *S. minuta*, *S. antillarum*, &c., with a white-fronted lunula. I have before me a Sternule, collected at Bogota, which is exceedingly distinct both from the North American *S. antillarum* and from the European *S. minuta*, and which I think is unquestionably the species referred to by Azara and Vieillot. It is at once to be distinguished from *S. minuta* by the plumbeous of the mantle extending over the rump and upper tail-coverts. Agreeing with *S. antillarum* in this respect, it differs from the latter species as follows:—It is considerably larger, the wing from the carpal joint measuring half an inch more. The bill is disproportionately larger and more robust, exceeding that of *S. minuta* by as much as, or more than, that of the latter surpasses that of *S. antillarum.* It moreover has no black apex, and is basally of a greenish hue. The legs are of an olivaceous greenish instead of a clear yellow. The black hue which separates the white frontal lunula from the white of the cheeks is very narrow and imperfect. The proportions of tarsus and toe are somewhat different. Length of bill, from the forehead, 1·40 (English inches and hundredths); height at base ·35. Wing, from the carpal joint, 7·00.

If this be not the *S. superciliaris,* it is doubtless an undescribed species.

12. HYDROCHELIDON FISSIPES, G. R. Gray ex Linn.

The common bird of Europe and North America.

a. Adult ♂, Southern Water Cay, British Honduras, May 1863; and other specimens.

13. HALIPLANA PANAYA auct. (nec Gmel. et Lath.).

Mr. Salvin's specimen of *Haliplana* is identical with numerous examples in the Philadelphian Academy's Museum, from the Antilles and other localities, including specimens received from Mr. Gould, from Australia, labelled by him "*Onychoprion panaya.*" Individuals of this widely distributed species from the most diverse localities are all absolutely identical. The form of the species agrees closely with *H. fuliginosa,* the type of the genus *Haliplana* or *Onychoprion*; but the colours are very different. The bill and feet are black. The cap, nape, and a line from the nostrils through the eyes glossy black. Primaries black; their inner webs with a median longitudinal white space; their shafts brownish black. Entire upper parts deep greyish slate. Front broadly white; the colour extending backwards over the eyes as a conspicuous superciliary streak. Whole underparts white. Tail a lighter shade of the colour of the back; the more internal rectrices bordered on their inner webs with white; the two external rectrices on each side white, with only a small part of their inner webs slate-coloured, the amount of the slate-colour varying greatly with individuals. Mr. Salvin's specimen has a somewhat broader white front than any other examples I have seen.

This is the species which is identified with *S. panayensis,* Gmel.

(*S. panaya*, Lath.), by the majority of modern ornithologists, and generally called *Haliplana* or *Onychoprion panaya*. But, for my part, I can see nothing in the diagnoses either of Gmelin or Latham by which they can be supposed to refer to the species in question. I consider Gmelin's name as referring, in all probability, to the *S. fuliginosa* from the Pacific Ocean, described by Forster as *S. guttata*, and again by the same author as *S. serrata*, and by Bloxham (Voy. Blonde) as *S. oahuensis*. This "*S. fuliginosa* ex Pacifica" has been by some authors considered as distinct from the common North American *S. fuliginosa*; but on examining a large series collected by the United States Exploring Expedition, I find them to be quite identical. Other specimens from Australia are also specifically the same. Therefore I consider that the name *panayensis* or *panaya*, Gm., Lath., is synonymous with *fuliginosa*, Gm. If such be the case, then the well-known species now under consideration has yet to receive a tenable specific appellation*. A third species of *Haliplana*, besides *S. fuliginosa* and the present one, is the *Haliplana lunata*, mihi, ex *Sterna lunata*, Peale, Ornith. of the U. S. Exploring Expedition. This is a typical component of the genus *Haliplana*, and is very closely allied to the species under consideration, the general distribution of the colours being entirely similar. It is, however, a perfectly valid and distinct species, differing somewhat in size, and very decidedly in the shade of the upper parts, as well as in some minor points of coloration. These three species are all that compose the genus *Haliplana*, as far as my knowledge extends.

a. "Lighthouse Reef," British Honduras, 10th May, 1862; and other specimens.

14. HALIPLANA FULIGINOSA, Gm.: Coues, Pr. Ac. Nat. Sc. Philad. 1863, p. 556.

One specimen only, from Curlew Cay. Agrees with specimens of the well-known species.—O. S.

15. ANOÜS STOLIDUS, Linn.: Coues, Proc. Ac. Nat. Sci. Philad. 1862, p. 557.

Numerous specimens from Glover's Reef I have seen, but did not obtain, specimens of the Noddy of the Pacific coast, which Dr. Coues now separates under the name of *A. frater*.—O. S.

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* See my forthcoming "Monograph of the *Laridæ*" (where the species is named *H. discolor*) for further elucidation of this point.

16. ANOÜS TENUIROSTRIS, Temm.

The specimens are identical with examples labelled "*A. tenuirostris*, Temm.," in the museum of the Philadelphian Academy; and, so far as I can judge, this identification of them is correct. Setting aside the common *A. stolidus* and my *A. frater*, its Pacific representative, and some species, e. g. *A. parvulus*, Gould (*A. cinereus*, Tréboux), which have been improperly referred to the genus *Anoüs*, the remaining valid species are *A. melanops*, Gould, *A. leucocapillus*, Gould, and *A. tenuirostris*, Temminck, all three very closely allied to each other. I believe they may be briefly distinguished thus:—*A. melanops* has white under-eyelids, and the very dark circumocular region rendered still more conspicuous by the ashy hue of the lores. *A. leucocapillus* has no white on the under eyelid; and the lores are of one colour with the dark circumocular region. *A. tenuirostris*, like *A. leucocapillus*, has the lores very dark coloured; but it has white under-eyelids. It is also notably smaller.

a. Adult ♀, "Glover's Reef," British Honduras, May 12, 1863.

The collection thus embraces fifteen or sixteen species of eight genera of two subfamilies of *Laridæ*.

XXXIII.—*Recent Ornithological Publications.*

1. ENGLISH PUBLICATIONS.

THE 'Edinburgh New Philosophical Journal' for October 1863 contains "Some Observations on the Eggs of Birds," from the pen of Dr. John Davy. These chiefly relate to the nature and properties of the colouring-matter, and to the results of certain experiments on the albumen. With regard to the former subject, Dr. Davy appears, generally, to have come to the same conclusion as Professor Wilke ('Naumannia,' 1858, p. 393) and M. Leconte (Rev. et Mag. de Zoologie, 1860, p. 199) have done, namely, that the colouring-matter "is not in any way owing to the presence of iron," and consequently is not derived from the blood—an opinion contrary to that maintained, we believe, by M. O. DesMurs in his celebrated 'Oologie Ornithologique.'

Dr. Davy plausibly suggests that the thickness of egg-shells bears a proportion to the weight of the parent bird, and to the time of incubation. This last point, however, is one on which we really have little authentic information, and we beg leave to suggest its consideration to some of our brethren who busy themselves only with British birds as a means of improving their "shining hours."

Sir Oswald Mosley's 'Natural History of Tutbury' (London, 1863) contains, amongst other ornithological notices by Mr. Edwin Brown, an account of the occurrence at Chellaston, near Derby, in May 1859, of a male example of the "Red-eyed Fly-catcher" (*Vireosylvia olivacea*) of North America. This is believed to be the first recorded instance of the occurrence of this bird as a straggler in Europe. A nicely executed coloured lithograph of the bird (drawn by Mr. Wolf) is given. Mr. Brown gives an extract from Mr. Gosse's notes on "this species" as occurring in Jamaica. This is rather unfortunate, as the Jamaican bird is, as is now well known to naturalists, a distinct species—the *Vireosylvia altiloqua* (Vieill.).

The 'Proceedings of the Natural History Society of Dublin'* contains frequent notices of the occurrence of rarer birds in Ireland, principally from the pen of Mr. Robert Warren, jun. Mr. Warren has paid much attention to the four species of Skua (*Stercorarius*) which occur on the Irish coast. Professor Kinahan, in some remarks on one of Mr. Warren's papers, conceives that the following conclusions have been established by Mr. Warren's observations upon these birds:—

1st. The Common Skua (*S. catarrhactes*) is a southern species, and a regular visitant in summer and autumn, following the shoals of mackerel and herrings into our bays, the British Isles being nearly its northern limit; the species breeding annually in the Orkneys, though not as yet known to breed in Ireland. 2nd. That the three other species, viz. Buffon's (or the Long-tailed) Skua, Richardson's Skua, and the Pomarine Skua, all occur as annual migrants—an annual migration of these birds northwards and southwards past our shores taking place regularly, both in early summer and in autumn. 3rd. Of these, Richardson's Skua alone has bred in this island; its autumnal migration occurring annually in the month of October. 4th. That Buffon's Skua (*Lestris buffonii*) has been seen, and specimens procured on its migration north, in the month of June. 5th. That the Pomarine Skua (*L. pomarinus*), at present our rarest species, has been once, at least, met with on migration south in October. 6th. That the specimens of the Pomarine Skua hitherto procured have been, for the most part, immature birds of the autumnal flight, being stragglers unable to keep up with the flock; but that the Long-tailed Skuas have been mostly mature birds on the autumnal migration, which have probably used this island merely as a resting-place.

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* 3 vols., and part 1. vol. iv. Dublin, 1864.

Our correspondent, Mr. George Dawson Rowley, has become the fortunate purchaser of a perfect egg of the extinct gigantic bird of Madagascar (*Æpyornis maximus*), and has printed the information he has collected concerning this subject in the form of a pamphlet, published by Messrs. Trübner*. The egg in question "was found at Mananzari, on the east coast of Madagascar, at a depth of forty-five feet, in a hill of ferruginous clay, by some Malgaches digging for an iron-mine." Its shape is an ellipse, of which the major axis measures 12¼ and the minor 9⅜ inches: its size is therefore nearly twice as great as that of an ordinary Ostrich's egg. The shell is of great strength. Its surface is "much stained with clay," but was "probably the same when first laid as that of the Ostrich, viz. a pale yellow white." In granulation it resembles the coarsely grained eggs of the Ostrich, but "the indentations are vastly coarser and larger."

Mr. Rowley has extracted, in his pamphlet, much of the previously published information concerning the *Æpyornis*, as given in the writings of Geoffroy St.-Hilaire, H. E. Strickland, and Professor Owen, and supplies us with a very fair *résumé* of the whole subject.

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* A Paper upon the Egg of *Æpyornis maximus*, the colossal Bird of Madagascar, by George Dawson Rowley, M.A. London, Trübner & Co., 1864: 16 pp.

2. French and Belgian Publications.

M. Ch. F. DuBois has kindly sent to this journal the first fifty livraisons of his 'Planches Coloriées des Oiseaux de l'Europe et de leurs œufs, espèces non observées en Belgique'*. This work, which was commenced in 1861, is intended as the same sort of supplement to the author's 'Oiseaux de la Belgique' as Dr. Bree's lately finished volumes were to Mr. Morris's 'Birds of Great Britain.' Each of the livraisons of M. DuBois's work contains three coloured lithographs, with an accompanying page of letterpress. They are not issued in order, but will form three volumes when complete. The designs are superior to those of ordinary books of this class, and are in many instances highly to be commended; but the colouring, as is usually the case in such books, is often defective. There are no descriptions given in the letterpress, and the few facts stated as regards localities, range, habits, &c., are not always correct according to the latest information we possess on these points. For example, we doubt whether *Lanius tchagra* (*Telophonus cucullatus*, Temm.) has ever been killed in Europe, except as a chance straggler; yet M. DuBois states, "elle n'est pas rare en Espagne et en France; elle a été prise en Bretagne;" and it is certainly not correct to say that "les mœurs de cet oiseau sont absolument les mêmes que celles des autres espèces du même genre (i. e. *Lanius*)." The habits of a Shrike and a Bush-Shrike are decidedly not identical. Again, *Ixos obscurus* is stated to occur in Java (!); and *Passer cisalpinus* to be found in the south of Siberia, Java, Syria, Bucharia, Daouria, Greece and great part of Italy, and the isles of the Mediterranean!

We have recently received the 6th and 7th livraisons of MM. Jaubert and Barthélemy-Lapommeraye's 'Richesses Ornithologiques du Midi de la France'†, completing the work. The quarto volume thus formed contains 518 pages, illustrated by coloured figures of the rarer species. We cordially recommend it to the attention of winter residents at Nice, and of all persons interested in European ornithology.

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* Bruxelles, Leipzig, et Gand: Muquardt, 1861–64, 8vo.

† Richesses Ornithologiques du Midi de la France, ou description méthodique de tous les Oiseaux observés en Provence et dans les Départements circonvoisins. Par MM. J.-B. Jaubert, Docteur en Médecine, et Barthélemy-Lapommeraye, Directeur du Muséum d'Histoire Naturelle de Marseille. 1 vol. 4to, Marseilles, 1859–62.

3. Dutch Publications.

The fourth livraison of Professor Schlegel's 'Muséum d'Histoire Naturelle des Pays-Bas' contains the enumeration of the specimens of *Momotus, Ibis, Pelecani, Procellariæ,* and *Lari.* To *Momotus* Professor Schlegel most correctly attaches the genus *Todus.* There can be little doubt, we have long been of opinion, that this is its natural place, as will be evident to any one who will compare any species of Tody with the smallest and most debile form of Motmot (*Hylomanes momotula*).

The following table gives a geographical view of Professor Schlegel's nineteen species of *Ibis,* in which we naturally take great interest.

Reg. Neotrop.	Reg. Nearct.	Reg. Palæarc.	Reg. Æth.	Reg. Ind.	Reg. Austr.
			I. *Tarsi scutati.*		
	falcinellus.	falcinellus.	falcinellus.	falcinellus.	falcinellus.
alba.	alba.				
rubra.					
			cristata.		
melanopis.					
			II. *Tarsi squamati.*		
cayennensis.					
oxycerca.					
infuscata.					
			comata.		
		nippon.			
cærulescens.					
			carunculata.		
			hagedasch.		
				papillosa.	
			calva.		
					spinicollis.
			religiosa.		
					strictipennis.
			melanocephala.		

Modern authors have separated these nineteen species into no less than sixteen genera; Professor Schlegel retains them in one. Of these two courses we should prefer the latter, as being more convenient than the former; but, as is usual in such matters, it may be most appropriately said here, *Medio tutissimus ibis*! To *Ibis* Professor Schlegel annexes *Scopus*; but says nothing of *Tantalus*, which, of the two, is perhaps more nearly allied to *Ibis*.

Under the head "*Pelecani*" Professor Schlegel includes "*Fregata, Graculus, Plotus, Pelecanus, Sula,* and *Phaëthon*," which, as he observes, form a very natural group, commonly called the *Pelecanidæ*. Similarly, Professor Schlegel's term *Procellariæ* includes all the members of the family *Procellariidæ* as usually received; and his *Lari*, the Gulls (*Larus*) and the Skuas (*Stercorarius*).

We have now also received the continuation of the new Journal of the Royal Zoological Society, Natura Artis Magistra, of Amsterdam, up to Nos. 10–12, which complete the first volume. It contains several ornithological papers of great interest.

Professor Schlegel describes (p. 74) a new Hornbill (*Buceros pulchrirostris*) from Elmina, on the Gold Coast of Africa, apparently closely allied to *Toccus camurus* of Cassin, but smaller. We may take this opportunity of remarking that we have recently compared Professor Schlegel's figure and description of *Buceros nagtglasii* with the type of Mr. Gould's *Tocchus hartlaubii*, now in the British Museum, and that there is no doubt that our surmises as to the probable identity of these two birds (expressed in 'Ibis,' 1863, p. 359) are correct.

Professor Schlegel also describes and figures (p. 123) a new Falcon (*Falco boschii*), from the Gold Coast, nearly allied to *Hypotriorchis severus* of the East Indies. The excellence of Professor Schlegel's drawing enables us to recognize in this bird, without any difficulty, the *Falco cuvierii*, Smith (S. Afr. Journ. i. p. 392). The only specimen of this apparently rare species we ever met with was amongst some birds from the South African Museum, Cape Town, forwarded to us for examination by Mr. E. L. Layard.

A little later we have Professor Schlegel's descriptions of two new Accipitrine birds, both of which he refers to the "subgenus" *Herpetotheres*. One of these is *Astur mirandollei*, from Dutch Guiana; the other *Astur spectabilis*, from Elmina, on the Gold Coast. Influenced, no doubt, by preconceived ideas as to the distribution of species, we can hardly believe that the latter bird, of which a figure is given (pl. 6), can really belong to the American form *Herpetotheres*. But *what* is it? We know of nothing like it.

Mr. J. P. van Wicklevoort Crommelin (p. 172) gives a notice of the species of Ducks that visit or reside in Holland, accompanied by some general observations on the variations of plumage in this group of birds; and the same gentleman, a few pages later (p. 217), contributes an article on *Syrrhaptes paradoxus*, which Mr. Newton has already alluded to (*anteà*, p. 185 *et seq.*).

4. ITALIAN PUBLICATIONS.

Professor Bianconi, of the University of Bologna, has commenced a series of papers, in the 'Memoirs of the Academy of Sciences' of that city, on the tarso-metatarsus of birds, with the view of ascertaining the systematic position of the extinct *Æpyornis*, of which the only bones hitherto found are two portions of the inferior extremities of the tarso-metatarsus. Professor Bianconi's first memoir examines the structure of this bone in the Scansores and Grallæ *.

The second volume of the Italian 'Archivio per la Zoologia, l'Anatomia e la Fisiologia,' published at Modena, contains an article, by Professor F. de Filippi, on new or little-known Vertebrates discovered by him during a recent expedition into Persia†. Professor Filippi was attached, along with Professor Lessona and the Marchese Giacomo Doria, as scientific observer to an embassy sent by the Italian Government, in 1862, to the court of Persia. The expedition set out from Genoa on the 21st of April, and reached Teheran by the route of Constantinople, Poto, Tiflis, Erivan, and Djulfa. From Teheran an excursion was made to the mountain-range of Demavend. At the end of August, Professors Filippi and Lessona returned home by Ghilan, the Caspian, and Russia, leaving the Marchese Doria to continue his investigations in Southern Persia.

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* Studii sul Tarso-metatarso degli Uccelli, ed in particolare su quello dell' *Epyornis maximus*. Bologna, 1863.

† Nuove o poco note specie di Animali Vertebrati raccolte in un viaggio in Persia nell' estate dell' anno 1862, per F. de Filippi (Arch. p. l. Zoolog. ii. p. 377; 18 pp.).

The birds obtained by Dr. Filippi during this journey, and described as new or little-known in the present paper, are seven in number, namely, *Irania filoti* (new gen. and sp. of Saxicolines from Demavend), *Dromolæa chrysopygia* from Demavend, *Otocorys larvata* from Demavend, *Alauda pispoletta*, Pallas, from Russian Armenia, *Emberiza cernutii* (allied to *E. hortulana*) from Russian Armenia and Persia, *Erythrospiza obscura* (Licht.) from Teheran, and *Picus khan*, a new species of Woodpecker belonging to the group containing *Picus syriacus*, *P. himalayensis*, and others.

We trust that this paper is only the precursor of a more extended account of the ornithology of Persia, as regards which we are at present in a lamentable state of ignorance.

The well-known Italian ornithologist, the Marchese Orazio Antinori, has lately published a catalogue of the collection of birds* which he made during his recent two years' expedition in Eastern Africa, and which have been purchased for the Zoological Museum of Turin by the Italian Government. The head-quarters of this enterprising explorer, whilst engaged in making this collection, were Chartum, whence excursions were made in different directions along the White and Blue Niles, and in the country between these two rivers. The species are systematically arranged according to the classification of Bonaparte, beginning with the Parrots. To each is attached a notice, more or less extended, of its range and habits; and in doubtful cases, and where the species are new, descriptions are given. The novelties are not very numerous; *Cypselus dubius*, *Nectarinia gonzenbachii*, *Eremomela* (?) *canescens*, *Drymoica* (?) *troglodytes*, *Elminia teresita*, *Lanius pallidus*, *Textor castaneo-auratus*, *Habropyga*

* Catalogo descrittivo di una Collezione di Uccelli fatta da Orazio Antinori nell' interno dell' Africa Centrale dal Maggio 1859 al Luglio 1861. Milano, 1864, 1 vol. 8vo, 118 pp.

rara, and *Streptopelia barbara* appear to be all. We cannot quite understand how it was that some of the numerous species lately described as new by Heuglin, from the same districts, were not obtained.

5. German Publications.

A new portion of Cabanis and Heine's 'Museum Heineanum,' lately issued, commences the enumeration of the Scansores of this important collection*, beginning with the Cuckoos, Bucconidæ, Trogonidæ, and Galbulidæ. The aim of the work is extended, Latin diagnoses of all the species in the collection, and indications of all other known species, being given, at least in the latter portion of this part. The synonymy is also very full and complete. But we see with regret the excessive multiplication of generic divisions, and the many (in our opinion unnecessary) changes in nomenclature proposed. For instance, *Bucco* is now split up into *Nystalus, Hypnelus, Chaunornis, Nothriscus, Argicus, Bucco,* and *Notharchus*; the American Trogons into *Trogon, Hapalarpactes, Tmetotrogon, Pothinus, Aganus, Hapalophorus, Troctes, Tanypeplus, Leptuas,* and *Pharomacrus*. We cannot believe that any advantage, likely to counterbalance the evils caused by the introduction of so many new terms, will result from this practice. We are well aware that it is all of a piece with what is going on in other branches of natural history; but it is, in our opinion, not the less objectionable on that account. While commenting thus plainly and openly on what we believe to be the demerits of this work, and trusting that our good friends Dr. Cabanis and Mr. Heine will excuse our free-speaking, we cannot but record our obligations to the authors for the great pains and labour bestowed upon it. The careful diagnoses and lists of synonyms must render it of absolute necessity to all working ornithologists of the present day.

Herr v. Pelzeln has sent us copies of two ornithological papers recently published in the 48th volume of the 'Verhandelungen' of the Zoological and Botanical Society of Vienna. In the first of these he describes two new species of birds lately obtained by Dr. Krüper (well known for his labours in Grecian ornithology) in the neighbourhood of Smyrna. *Sitta krueperi* appears to be a well-marked new species of Nuthatch—*pileo nigro, dorso cineraceo, superciliis latis gulaque albis; torque pectorali lata castanea; abdomine cinerascente. Saxicola albigularis* is likewise a novelty of much interest, which has also been recently obtained by Mr. Tristram in Palestine—*pileo dorsoque cinereis; superciliis albis; gula alba, pectore ochraceo-ferrugineo; crisso albo; cauda nigra.* V. Pelzeln compares it with *Cossypha gutturalis,* Guérin-Méneville, and *Irania filoti,* De Filippi.

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* Museum Heineanum: Verzeichniss der ornithologischen Sammlung des Oberamtmanns Ferd. Heine auf Gut St. Burchard vor Halberstadt, mit kritischen Anmerkungen und Beschreibung fast sämmtlicher Arten, systematisch bearbeitet von Dr. Jean Cabanis und Ferdinand Heine, Stud. Phil. Vierter Theil, die Klettervögel enthaltend. Heft. 1, Kuckuke und Faulvögel. Halberstadt, 1862–63.

Another paper, by A. von Pelzeln, in the same journal describes four new birds collected by the late Joh. Natterer in Brazil *. These are an Owl (*Syrnium superciliare*), allied to *S. albitarse* (which latter, we believe, Schlegel is quite wrong in identifying with *S. hylophilum,* Temm.), and three Tinamous,—*Tinamus guttatus,* of the same form as *T. brasiliensis* (*tarsis postice parum serratis*); *T. erythropus,* allied to *T. strigulosus* and *T. sallæi*; and *T. brevirostris,* near *T. variegatus.* Notices from Natterer's MSS. accompany the descriptive characters. Herr v. Pelzeln would render a valuable service to science by publishing a general account of the *Tinamidæ* in the Vienna collection, where, we believe, the series is very complete.

In our last year's volume ('Ibis,' 1863, p. 226) we spoke of Professor Carl J. Sundevall's very valuable essay on Aristotelian natural history, published in the Royal Swedish Academy's Transactions for 1862. Messrs. Samson and Wallin, of Stockholm, have since published a translation into German of this Essay †, which will render it accessible to many who would not otherwise have been able to profit by it. Professor Sundevall takes exception (in a kind letter which accompanies a copy of the work) to our remarks ('Ibis,' 1863, p. 226) on his identification of the *κύανος* and *κορυδαλὸς* of Aristotle. Upon reperusing his notice of these two terms in the translation, we must admit that the *κύανος* as described by Aristotle is more like *Tichodroma muraria* than *Petrocincla cyanea*, and that Professor Sundevall is also probably right in his identification of the two species of *κορυδαλὸς*. Professor Sundevall's work will be invaluable to the compilers of the next classical dictionary in which the correct interpretation of zoological terms is attempted. Professor Sundevall identifies the following terms rather differently from their usual acceptation :—

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* Ueber vier von Natterer in Brasilien gesammelte noch unbeschriebene Vögelarten, von Aug. v. Pelzeln, *ibid.* (Oct. 10th, 1863).

† Die Thierarten des Aristoteles von den Klassen der Saügethiere, Vögel, Reptilien und Inseckten, von Carl J. Sundevall. Stockholm, 1863. 1 vol. 8vo.

No. 90, p. 128, *γλωττὶς*.	*Iynx torquilla.*
112, p. 141, *ἀτταγὴν*.	*Perdix cinerea.*
47, p. 112, *τέτριξ*.	*Pratincola rubetra* !
151, p. 158, *αἴϑυια*.	*Larus* (prob.) *marinus* !

Dr. A. E. Brehm, now Director of the recently established Zoological Garden in Hamburg, has lately published an account of the journey made in the suite of H.R.H. the Duke of Saxe-Coburg-Gotha in Eastern Africa in 1861, and his observations on the various species of mammals and birds met with during his travels *. From Massoua on the Red Sea, whither Dr. Brehm had proceeded first, in order to make preparations for the noble traveller, several short excursions were made into the interior. After the arrival of the Duke, on the 1st of April, a final start was made. But, for some reason or other, not clearly explained (perhaps the hardships of African travel did not agree with the constitution of the illustrious Prince), the party turned back after some twenty days' advance, and left for home again on the 26th of April. Not unnaturally, our philosopher complains of want of time, although he appears to have been also sore stricken with fever.

In the ornithological part of his present work, Dr. Brehm first gives a systematic list of 172 species of birds *seen* by him during his journey on the Red Sea and in Abyssinia. It seems that no specimens were obtained; but Dr. Brehm, from his previous travels in this part of the world, is, of course, thoroughly competent to identify most of the species met with. He then gives a series of remarks on the habits and manners of the different species, referring often to the accounts of them published in 'Naumannia,' from observations made during his former journey up the Nile. These notes are of much value and interest: we know so little of the *life* of foreign birds. It is too often the practice of travellers to content themselves with a bare enumeration of the Latin names of the species observed or obtained, without one single word of explanation concerning their habits.

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* Ergebnisse einer Reise nach Habesch im Gefolge Seiner Hoheit des regierenden Herzog svom Sachsen-Coburg-Gotha, Ernst II. Von Dr. A. E. Brehm, &c. Hamburg, 1863, 1 vol.

This part of the Abyssinian coast-land, which is now easily accessible by steamer from Suez, seems to be a very promising field for the ornithologist. *Neophron percnopterus, N. occipitalis, Gyps rueppellii, Vultur occipitalis,* and *Otogyps auricularis* are all more or less common. Truly this must be the land of Vultures! Amongst the more southern African forms, we observe in Dr. Brehm's list *Hapaloderma, Buphaga, Lamprocolius, Vidua, Toccus, Palæornis, Trachyphonus,* and *Indicator,* offering most attractive novelties to those who are only acquainted with European ornithology; and where three German princes can go for a hunting-excursion, there can be few difficulties to be encountered by the brethren of the B. O. U. and their friends.

6. AMERICAN PUBLICATIONS.

In the 'Proceedings of the Academy of Natural Sciences of Philadelphia' (1863, p. 283), Mr. W. T. March's "Notes on the Birds of Jamaica" are continued, the scientific determinations and an occasional foot-note being supplied by Professor Baird. Mr. March distinguishes two species of Polytmus Humming-bird in the island, and two of *Mellisuga,* besides "another small species, rather larger than *M. humilis,* with the plumage of a bright metallic or bronzed green." Is Mr. March correct here? The larger *Chordeiles virginianus* of the Continent appears to be found in Jamaica, as well as *Chordeiles minor,* which we suppose to be a constantly resident species.

The following note on the Palm-Swift (*Tachornis phœnicobia*) affords an interesting instance of change of habits, such as we may suppose to have originally occurred in our own Hirundinidæ and Cypselidæ:—

"Previous to 1854, the habitat of the Palm-Swift was altogether confined to the palm-trees in this district (St. Catherine) and to the cocoa-nut palms near the coast at Wrack Bay, Healthshire, Port Henderson, and Dawkins Pen, at Passage Fort. In that year a colony of them established themselves on two cocoanut palms in Spanish Town, one near the centre of the town, the other at the north-east corner; and there they remained until, in 1857, the palm at the north-east was taken down, and the other divested of the lower fronds and the Swifts turned adrift. They were then, for the first time, observed flitting about the lower piazzas of the House of Assembly, the upper part of this building having been previously occupied by the *H. fulva*. In a short time these prior occupants were driven out, and a considerable colony of Palm-Swifts now occupy the lower colonnade in front of the ground story, used as public offices, where they build on the tops of the end walls, or at the angles formed by the beams and joists. None resort to the upper piazza; but they pertinaciously drive away the *H. fulva* on every attempt they make to effect a lodgment. Small colonies of the Palm-Swifts last year (1862) again returned to the palm in the centre of the town; but the large colony still retained its position in the buildings."

Of *Mimus* Mr. March notes two species as occurring in Jamaica, one of which he describes as new, under the name *Mimus hillii*. Dr. Baird states that this new species is "very closely related to, if not identical with, *M. gundlachii* of Cuba." Another bird provided with a new name in this paper is the *Spermophila bicolor* of Gosse, which Professor Baird proposes to call *S. marchii*,—the true *Fringilla bicolor* of Linnæus, from the Bahamas, being specifically different. We have never seen the Bahaman bird, but have had some difficulty in determining whether Mr. E. C. Taylor's Martinique specimens (see *anteà*, p. 167) ought to be referred to the Jamaican or Tobagan species, *Tiaris omissa*, Jardine.

In a paper entitled "Notes on the *Mimidæ* of Jamaica, by Richard Hill," which immediately follows Professor Baird's, Mr. Hill attempts to show that the *Mimus hillii* above referred to is the true *Turdus orpheus* of Linnæus, and that the Common Mocking-bird of Jamaica is the true *Turdus polyglottus* of Linnæus. If this be so, the well-known North American species must take some other appellation.

Mr. H. Bryant publishes, in the 'Proceedings of the Boston Natural History Society'*, some "Remarks on the Genus *Galeoscoptes*, Cabanis, with the characters of two new Genera, and a description of *Turdus plumbeus*, Linn." It would appear that the true *Turdus plumbeus* of Linnæus (founded upon Catesby's description) is quite distinct from the *Turdus ardosiaceus* of Vieillot, of Porto Rico and St. Domingo: Mr. Bryant even makes a distinct genus of it, which he calls *Mimokitta*! But we are rather inclined to agree with Professor Baird, who (*in litt.*) arranges this little section of Thrush-like Mockers of the Antilles as forming four species of *Mimocichla*, as follows:—

1. *M. plumbea*, ex ins. Bahamens.
2. *M. ardesiaca*, ex St. Domingo.
3. *M. schistacea*, Baird, sp. nov., ex Cuba.
4. *M. rubripes*, ex Cuba.

XXXIV.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters addressed "*To the Editor*":—

Villa Laurenti, Mentone, France.

Sir,—The migratory birds have already, by their arrival, reminded me of the year that has passed without my sending you such notes as I may have gathered together in the interim.

I must therefore ask your leave to return in imagination to January 4th of the past year (1863), from which time my jottings recommence. On that day I was passing, with my brother, through the lemon-terraces which clothe the warm hill-sides

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[*] Proc. Boston Soc. N. H., Dec. 16th, 1863.

towards Pont St. Louis, and saw a single Wryneck (*Yunx torquilla*) worming its way among the leaves, with its peculiar sidelong motion and well-marked brown-striped back. I have never again seen this bird as a winter resident, unless I should allow one example which I observed, last October (25th), to rank as such. Throughout the early spring (1863) the Black Wheatear paid us many visits, being excluded from its wilder haunts by repeated falls of snow. Perhaps we owe to the same cause the passage of a flight of birds of the Crow family, on January 18th. Their general appearance was that of Red-legged Crows (*Pyrrhocorax graculus*), but they may perhaps have been no other than the Alpine Crows themselves (*P. pyrrhocorax*). They did not alight, but passed determinedly over our heads in a S.W. direction. During this month I frequently saw the Rock Creeper (*Tichodroma phœnicoptera*), and on one occasion, (January 20th), when driving through the town of Ventimiglia, perceived one of them climbing most composedly the dirt-crusted walls of a many-storied Italian house. This gay street-bird, dressed in crimson and grey, was but a few yards from a dismal little window, out of which, at any minute, curious eyes might have cast hungry glances on the brilliant visitor. I last saw the *Tichodroma* on March 14th, 1863, the individual being a fine male bird with his newly acquired jet-black throat. After this date I believe that they leave the coast, and seek their breeding-places among the mountains. Throughout the year I did not see any really early migrants, my notes giving the following:—One female Black Cap, January 23rd; Swallows, April 1st; Redstart (*Ruticilla phœnicura*), April 4th; Cuckoo (*Cuculus canorus*), April 19th; Swifts (*Cypselus apus*), April 28th. As for the Hoopoes, I did not notice one till quite the middle of April, though they are in reality the earliest of our visitors, bearing the local name "Le Coq de Mars." As the spring advanced, I saw among the intricacies of the lemon, orange, and olive trees many insect-hunting birds of colours and forms new to me; and, were it not that the mere transitory glimpses obtained form no admissible evidence, I might have been tempted to recount some of the wild-goose chases on which I have so often been led. I shall only, however, venture to represent two occasions on which, in either case, I had at least a song for my pains. (1.) I must ask you to imagine a very hot April afternoon, heated by an Italian in place of an English sun. The steep hill-side on which I am affords shade and sunlight, moist places, and baked and crumbling earth. We have here no beech-leaves, blue-bells, or wood-anemonies, but, instead, fir-needles, brown serapias lolling out thirsty tongues, gaunt limodorums, leafless and straight, and on the shady banks graceful creamy-white orchises (*Orchis provincialis*) with their purple-spotted leaves prostrate in adoration. I, too, am dreamily filled with a vague reverence, and, while engaged in an attempt to adjust the respective claims of sun-lovers and shade-lovers among plants, am startled by a call-note ringing out from the misty grey of the olive-trees above me. Soon a conversation is established, and chattering and gurgling bird-voices question and respond; and while I am creeping forward, rich-toned throats send out their great thankful roll, which, with a much-added volume, has the beauty of those few notes given out by a Thrush before the song overpowers him, and his utterance is choked with the rapidity of varying melody. The display is but limited, and soon they perceive danger, and one by one slink away through the tree-tops, vanishing so cleverly that I only get one glimpse of the flashing gold and black plumage of the Oriole! I was very much struck by the foreign ring of their dialect, the sound being rather such as one might expect to reach one from the steamy atmosphere of some tropical thicket tangled with ipomæas, than out of the pale shade of gnarled olive-trees, of which the only permitted encumbrance are the soft green tendrils of some scrambling vine. I may notice here that, during the three winters passed by me at Mentone, I have always remarked the subdued voices of Song-Thrushes and Blackbirds in these parts. They never venture to burst into the free singing so well remembered in our English spring-times. I suppose they fear the presence of the chasseur, and dare not utter their devotions above their breath, unless, indeed, they may perhaps find solitude in some mountain pine-wood where they may fly and sing in safety, as in the fastnesses of the wild rocks the persecuted Rock-Thrush pours out a wild thanksgiving, free and unrestrained. (2.) Once more, I should like to ask your leave to describe another and a less satisfactory pursuit, in case the faint indications I am able to give of the strange song heard may suggest some reflections on European warblers and their varied powers. The 1st of May, 1863, ended in a lovely still evening, tempting the dusty world to come and enjoy the approaching cool. About half-past five I made my way to a neighbouring valley with my sister. The sea on our left was almost motionless as we passed, and far out over its glassy surface multitudes of Swallows were skimming, employed as busily as if they were among the gnats haunting some inland water.

The valley was soon reached, and there insect-life seemed at its full, as the armies of day *Ephemeræ* whirled and eddied in company with the earliest of the night-fliers. The soft bills of the *Sylviadæ* were feebly snapping in all directions, and the variety of these birds was at once confusing and full of excitement. Suddenly I was startled by a call closely imitative of the best notes of the Oriole, which quickly changed into weak piping trills, and then once again to a long succession of melancholy whistling cadences producing a strange weird effect, totally un-English. These latter sounds were so unbird-like, that on rejoining my sister I found her fully convinced that I had attempted to attract the stranger by luring his attention with a varied whistle. I certainly thought that the bird must have been a mocker, and I much regret that the thick masses of lemon-leaves baffled all my attempts to gain any view of the songster. May 5th, 1863, has a very pleasant memory attached to it for me, as on that day I was surrounded by a flight of Bee-eaters, all playing their airy antics overhead. These birds proclaim their coming from afar by constant piping cries, and are quite unmistakeable when seen near; their curiously curved bills, bright colours, and finely pointed tails giving them an appearance to which I can make no comparison. Their voices quite fill the air, and the stranger has only to listen for a sound very similar to that uttered by a flock of chickens, but coming from ever-changing distances with a deceitful enchantment like the song of Ariel. It was also in the beginning of May that I saw a Spotted Cuckoo (*Cuculus glandarius*); but I heard no cry, and can only state that the bird has some general resemblance to a

Magpie, the slender shape and habit of jerking its tail perhaps contributing to give it this likeness.

Before I close this list of reminiscences, I must mention that I saw my first Swallow (*Hirundo urbica*), this year, on March 19th, since which date they have become very abundant. I also saw a Hoopoe on March 9th, thus proving its title to be called a "March fowl." Yours &c., J. TRAHERNE MOGGRIDGE.

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15 St. James's Square, London,
May 1st, 1864.

SIR,—I am able, from my own observation, to add the Collared Turtle (*Turtur risorius*) to the list of European birds (in which, I see, it is not included by Professor Blasius), having met with it at Constantinople last April. My first introduction to this species took place at Smyrna, where I stayed a few days *en route* from Egypt to Constantinople. I there found these Doves in considerable numbers among the cypress-trees growing in the Turkish cemeteries in the vicinity of the city. I was certainly rather surprised at meeting with a bird of strong flight and wide geographical range, like a Turtle Dove, of a species hitherto excluded from the European list, at Smyrna, so near the political rather than geographical boundary which divides the Greek from the Asiatic islands. On arriving at Constantinople, I again met with a few pairs of my friends, *Turtur risorius*, among the cypress trees of the seraglio-gardens in Stamboul. Thus I consider that this species is fully entitled to a place in the list of European birds.

I do not think it would be possible for any *accurate observer* to mistake either *Turtur auritus* or *T. ægyptiacus* for this species, as Mr. C. A. Wright suggests (Ibis, 1864, p. 139) Mr. E. Newton did; neither can I agree with Mr. Wright that *Turtur risorius* does not usually appear so far north as the Mediterranean, since at least half the area of that sea lies below the meridian of Smyrna, at which place I ascertained that *T. risorius* is a regular visitant. I have no doubt that this species is the parent stock from which those pale isabel-coloured Doves with a black collar, so commonly kept in cages, are derived.

I am, Sir, yours &c., E. CAVENDISH TAYLOR.

Sir,—In the 'Ibis,' p. 124, *anteà,* it is remarked that "the true *Bucconidæ* and *Capitonidæ* are very distinct families," and that "these groups differ not only in external form, but also in internal structure and in habits. The error of uniting them was *first pointed out* by Dr. Cabanis, and has since been commented upon by Professor Burmeister, by ourselves, by Mr. Wallace, and by other writers. The *Capitonidæ* are closely allied to the Toucans in habits and structure. Like them, they have but ten tail-feathers, and the furcula imperfect at the junction of the rami. The *Bucconidæ,* on the other hand, are essentially allied to the Trogons and Jacamars, with which indeed they are united by Burmeister into one family."

I am not aware of the date of Dr. Cabanis's remarks upon the subject, but have myself expressed any time within the last thirty years the same opinion, and in print so long ago as 1838, in the old 'Magazine of Natural History,' n. s., when edited by Charlesworth (vol. ii. p. 317). It is true that I there designated the families *Bucconidæ* and *Tamatiadæ*; but the Green Barbets were then generally considered to exemplify typical *Bucco.* I think, too, that I was the first to point out the affinity between the *Capitonidæ* and the *Rhamphastidæ,* which observation I made upon dissecting my first Barbet, about the second day of my holding charge of the Calcutta Museum in 1841. In 1838 or 1839 I further pointed out that in the *Musophagidæ* also the clavicles do not unite—at least as a general rule; for I have since ascertained that they do so occasionally. The genus *Colius* I have never yet had the opportunity of examining, except externally; but *Chizærhis* approximates, it very closely in shape of bill and feet, and even colouring of plumage, differing chiefly in the form of the tail; and perhaps the Madagascar genus *Coua* may prove, upon anatomical examination, to appertain to the *Musophagidæ.* The habits of the *Bucconidæ,* or "Puff-birds," are well described in Swainson's 'Zoological Illustrations'; and I approximate to these birds the Madagascar genus *Leptosomus,* with its twelve tail-feathers, and the genus *Indicator* to the *Picidæ*; so that the Cuculine series, as I recognize it, presents no instance of more than ten rectrices, the *Crotophagæ* having only eight. I have but slightly modified my opinion of the respective affinities and classification of the non-Passerine *Insessores* since the year 1838.

The last two numbers of the 'Ibis' elicit the following remarks:—

Page 17. *Suya gracilis*; *Prinia gracilis*, Rüppell. Examination of Nubian specimens has convinced me that this species is undistinguishable from my *S. lepida* of India.

Page 23. Nubian Sparrows also are absolutely undistinguishable from the so-called *Passer indicus*.

Page 57. The *Hirundo rufula* of Africa is not the *H. daürica* of Asia, although the two species are nearly akin.

Page 63. So far as I have seen, the sexes of all Orioles, when fully mature, are alike in plumage, excepting that the females are not quite so vividly coloured as the males. What are commonly mistaken for the females are the young of either sex; and some females breed before attaining their final colouring. I have shot the female of *Lanius collurio*, with ova far advanced, in the finest masculine plumage; and another individual in partially masculine attire, not in moult, but having assumed an intermediate livery to the ordinary plumage of the two sexes.

Page 105. *Pitta cyanoptera* inhabits also Arakan and the Tenasserim Provinces; probably, likewise, the Indo-Chinese territories generally. Occasionally an individual occurs with a particularly large bill, and upon one of these a species has been sought to be founded.

Page 110. The *Pitta* genus is scarcely Himalayan; and, to be very correct, I should rather say *from the base of* "the Himálayas to Ceylon."

Page 180. My friend Col. Tickell seems indisposed to believe that *Buceros albirostris* inhabits Bengal. It is the only species which is not uncommonly brought alive to Calcutta; and it abounds in Eastern Bengal, Nipal, and in Assam. I likewise obtained it in the Midnapore jungles, where it meets the *B. pica* (vel *malabaricus*), which extends throughout the Indian peninsula and Ceylon. In the Deyra Doon the *B. affinis* occurs, being like *B. albirostris* in colouring and form of casque, but as large as *B. pica*; and in the Malayan region the *B.* (*convexus*) with the form and small size of *B. albirostris*, but the entirely white four pairs of outer tail-feathers of *B. pica*.—E. BLYTH.

Formosa, March 7th, 1864.

Sir,—On a voyage to China overland from England *viâ* France and Egypt, one makes such a hurried transit through the various interesting countries, that not much time is left for ornithological observations. A few incidents and occurrences, however, I have jotted down, which may prove of some interest.

Between Marseilles and Malta, when eighty miles from the latter place, the weather being calm, two male Sparrows (*Passer domesticus*, L.) and two Robins (*Erithacus rubecula*) came on board the steamer, and stayed a short time; they were evidently on their passage across from Europe to the African coast. Between Malta and Alexandria, about 100 miles off the African shore, a Gold-crest (*Regulus cristatus*) came on board. The weather was then also calm; so that this little fellow must have been making a long sea-journey with some intended object. His appearance was so sudden that I could not tell from what direction he came. If a short-winged creature, like a typical *Regulus*, can venture with confidence so far out to sea, no wonder that its long-winged ally, the *Reguloides modestus*, Gould, should turn up in such improbable latitudes.

At Cairo we did the sights on donkey-back, as every Englishman does, and, among other "lions," went to see the Pacha's gardens on the banks of the Nile. In these prettily laid-out grounds a very small portion was devoted to zoology. The menagerie contained a female Hyena and two cubs, a few Ragged Pheasants (*P. colchicus*), a hen Silver Pheasant (*Euplocamus nycthemerus*), and some domestic poultry. The attendants assured us it was only a commencement. This we could plainly see ourselves; but, at all events, it shows a taste in the right direction, and we may hope for improvement. Our run from Alexandria to Cairo was so hurried that I had not time to note many birds. Kites were floating on lazy wing over Alexandria, and were continually seen about the Nile. They were, I presume, the species known as *Milvus ater*, but in scream and manner were very similar to our Chinese friend. About the marshes near Alexandria there was an abundance of small water-fowl (27th October), of which the only bird that particularly attracted my attention was a Black-breasted Plover seen singly or in small parties.

The Nile, with its glowing sunsets, its squalid mud huts, with tall graceful date-palms rising against the sky, is quite the Nile of pictures, but washed with dust and dirt. The men are squalid in the extreme, usually with one eye, the other sunk in its socket and exuding moisture, affording attraction to the numerous flies that appear at all seasons to throng the air—an abundant remnant of the Mosaic plague which was brought in judgment on Pharaoh and his followers. The women do well to hide their faces beneath the Yashmac cloth, and to bare their legs, the latter being far the more gainly of the two. Several Red-breasted Swallows (*Hirundo rufa*) were sporting about a mud-heap at Cairo. Many naturalists consider these a variety of *H. domestica*; but surely they are more markedly distinct from that species than are the several variations of the Black Kite group and other closely allied forms from one another. Besides the date-palms, two other characteristic trees of Egypt, which are found everywhere about Cairo, and which form an umbrageous avenue along the pleasantest road on the banks of the Nile, are a species of *Ficus* allied to the Indian banyan, with large fruit, and a species of *Acacia* with long leguminous pods.

We rattled quickly down about two-thirds the length of the Red Sea, when a hard breeze met us from the contrary direction. A few Sand-Martins (*Cotyle riparia*) then made their appearance, and followed the ship for a day or two. In passing the Straits of Babelmandel *Sulæ*, *Lari*, and *Sternæ* were abundant, as also on the Arabian coast near Aden. We arrived at Aden at dark, and left again before daylight. The next day (5th November) a few Swallows (*Hirundo domestica*) followed the ship, apparently bound for the Indian coast. On the 7th and 8th a small Goatsucker (*Caprimulgus asiaticus*) kept about the ship. The sky was cloudless, and the breeze very light.

9th November, 200 miles off Bombay. Afternoon; little breeze. Ship going ten knots. Sea leaden grey, the ship throwing purple shadows on the westward side. Flying-fish rise all round in parties, and splash again into the water, like stones thrown from the ship. The largest fly the furthest, raising their wings high over their heads, and bending their tails down towards the water; some dash askew. Four or five Tropic Birds (*Phaëton* *candidus,* Briss.) are hovering round the ship. They appear to be in winter plumage, for their tails are only four inches or so long; their bills are red. As they keep alongside the ship, they resemble Pigeons in flight, but make less strong and frequent flaps, tumbling occasionally on the wing in somewhat similar manner. One pounced head downwards, zigzag, but stopped short before touching the water, and, hovering for a second, resumed its flight.

Bombay, 10th November. Visited the Town Hall. They have there a very fine library, a small collection of Indian produce, fossils, and bits of rocks, with shells and miscellanea. I asked Mr. Bridwood, the curator and secretary, whether they possessed any specimens of local mammals or birds. He replied that they used to have them, but found that the great changes of the Bombay climate, from dry to moist heat, in a very short time quite destroyed them! He said they always sent such collections to England. I should like to know, to whom? We spent in all four days at Bombay, during which time I, of course, visited the celebrated Caves of Elephanta. The island on which they are is about six miles distant from Bombay. They are well worth visiting, though dilapidated and badly looked after. I will not bore you with a description of them, as the curious on this subject can derive more information than I have space to give here from a glance into Murray's 'Guide to India.' The chief birds observed were several Eagles (*Spizaëtus,* sp.), black and white, soaring over and dropping to roost among the trees of Elephanta. On the muddy shores of the island, among the scattered rocks, at low water, numbers of small yellowish-mottled, long-spined *Echini* lay sprinkled about, and much annoyed the naked feet of our native boatmen. A few Herons (*Ardea cinerea*) were stalking about. The Fan- or Palmyra Palm was the most abundant of the Palm group, as generally throughout Bombay; the Cocoa-nut next. The Dates were short and stunted, and did not seem to thrive as in Egypt. The sunset, with its vivid changes of light, closing up the panorama with a red-hot coal-like glow, was truly enchanting. The following are the notes on birds, jotted down during my rambles about the outskirts of the settlement.

Malacocircus griseus, Gmel., with light-brown plumage, dark-brown wings, fulvous rump, white eye, and yellow bill, frequenting hedges and gardens in noisy parties, flying into the latter in the early morning, and hopping about and searching for grubs among the dead leaves at the foot of bushes and at the roots of trees. They hop about with ruffled feathers, quarrel and scream in notes between those of Jays and Woodpeckers, and fly from bush to bush with roundly expanded wings and tails. They a good deal resemble the members of the *Garrulax* group, but are noisier and bolder. I learn from Jerdon (Birds of India) that some of the *Malacocirci* are fair songsters. In this respect and in form they constitute close allies of the Chinese and Formosan Song-Thrush (*Leucodioptron sinense* et *L. taëvanum*); and I cannot help thinking that these two species ought properly to be referred to *Malacocircus* instead of being isolated into a genus for themselves.

Nectarinia zeylanica, L. ♂ with resplendent purple upper parts and yellow breast; ♀ greenish. Usually in pairs, very busy about flowering bushes. They seemed to prefer the large *Hibiscus* flower, hanging about it and searching with their bills the rim of the calyx for small insects. A Crow (*Corvus splendens*) pounced upon one of them under my eyes, and carried it away in his bill, the little creature screaming in agony. Their notes call to mind at times those of Tits, at others those of White-eyes.

Milvus govinda, Sykes. The Bombay Kite looked smaller and darker than those of China. They were carrying about sticks for building with.

Corvus splendens, Vieillot. Abundant and noisy, full of tricks; also carrying about twigs.

Corvus culminatus, Sykes. Occasionally seen. Their caw, loud and peculiar, not unlike that of the Chinese Crow.

Coccystes melanoleucus, Gmel. Watched one for some time, through a glass, on a large bush. It kept flying on the leaves, and back to a perch, probably after caterpillars or spiders.

Dicrurus longicaudatus, A. Hay. Several about gardens. The only species observed. They sit bolt upright on the perch, and are light and extremely graceful on the wing, turning off occasionally in flight to make a playful swoop at a passing *Malacocircus.* It sometimes slips a foot, as if about to make a false start, and suddenly checks itself. Another insect passes, and off it goes, returning to the same or another perch before swallowing its capture.

Ruticilla phœnicura, L. I feel pretty sure it was a male of this species that I saw, and not of one of its numerous allies. It has been procured from Northern India.

Merops viridis, L. It is quite a pretty sight to watch a party of these graceful creatures sporting in the sunlight. Small parties of them sit about the tops of hedges, two or three springing into the air at a time, and sailing about in different directions, making usually several captures before returning to their posts. They continue their pursuit very quietly, only occasionally uttering a short, sharp chirp.

Thamnobia fulicata, L. I watched a female searching for food on the ground. It moved about in short runs, like a Wheatear, throwing up its tail almost perpendicularly, more like a Wren than a Robin.

Lanius erythronotus, Vigors, has very similar notes to *Lanius schach* of China, but perhaps a little feebler. It is the small Indian representative of that species.

Petrocincla cyanea, L. Seen solitary, seated on walls and housetops, the same as in China.

Ixos hæmorrhous, Gmel. In notes and general habits very similar to the Chinese *Ixos chrysorrhoides,* Lafr.

Acridotheres tristis. Very like the Chinese *A. cristatellus* in notes and habits.

Iora typhia. Chatters on the sprigs of bushes, like a young Sparrow.

Oriolus kundoo. Springs into the air after flies.

Ardea (*Buphus*) *coromanda.* In winter, in plain white plumage.

Copsychus saularis, L. Common about houses.

I observed many other birds, whose names I do not insert, as I have nothing special to report of them. I would draw attention to the similarity of the notes of many species of a genus, especially of the *representative* species, in Bombay, Ceylon, Singapore, and China, chiefly in such genera as *Acridotheres, Ixos,* *Orthotomus*, *Prinia*, &c.; so much so, that on hearing the note, without seeing the bird, I could frequently pronounce with certainty the *genus*, from my acquaintance with the allied species in China, though I had never noted the particular species before. The same may be said of their relative habits. In fact, the more nearly connected the form, usually the more similar the notes. The same may be said of the birds of the Formosan Mountains. What Jerdon relates of certain Himalayan species, as to the height they mostly affect, their habits, nesting, and song, would apply equally well to the Formosan representatives of the several forms, though they have changed somewhat in the distribution of their tints. On this subject I shall probably have a few more words to offer, as also on some interesting facts relating to migration, in a notice on Jerdon's 'Birds of India,' as bearing on the birds of China, which I purpose, at a future date, to draw up at my leisure.

On the 14th we left Bombay, and coasted along off the Carnatic. On the 15th it was calm: a Reed-bird (*Calamoherpe dumetorum*) came on board. 19th, squalls off land, accompanied with rain. Birds blown off to the ship—several *Budytes viridis* in winter plumage, a small *Anthus*, a few *Tringa cinclus* and *Hiaticula cantiana*, and one *Gallinula phœnicura*. These perched about the rigging and awning all day. The *Budytes* were very tame, running about the decks, catching flies. They had grey heads; the finest male, with a light sulphur breast, having a short white mark over and under the eye. At evening two Falcons (*F. æsalon*) made their appearance. It was then calm. One of them seized a *Budytes* and the other a *Tringa*; and, carrying their prey boldly on to the yards, devoured them, showering the feathers about in all directions.

November 23rd, Galle. I spent a fortnight in Ceylon, during which time I visited Colombo and Kandy, and other neighbouring places; but my motions from place to place were so hurried, that I made few notes on birds. In this evergreen isle, with its jungles and endless groves of cocoa-nut trees, reptiles appear to constitute the chief class of Vertebrata. Lizards, of a great variety of species, were especially abundant. Along the main road from Galle to Colombo, through avenues of cocoa-nuts, birds were scarce. I frequently heard the Crow-Pheasant (*Centropus rufipennis*), and the loud metallic sound (*Ka-tock*) of the Coppersmith (*Megalæma*, sp.). *Corvus splendens* was abundant about towns; *C. culminatus* about detached huts. At Galle, in the evening, large parties of a species of *Merops* would be seen at sunset, hawking about at some height in the air after flies, much as *Libellulæ* (Dragon-flies) usually do. Kandy is so cleared—in most places right to the top of the hills—for the plantation of the coffee-plant, that it is difficult to find a bit of primitive jungle. I climbed to a small patch of forest on the top of a hill 5000 feet above the sea-level. A pair of Jungle-fowl, with a peculiar Pheasant-like cry, flapped heavily across the brake, from one copse to another. The jungle in this exposed situation consisted of poor stunted trees and scattered underwood, damp everywhere underfoot, the ground being composed of layers of saturated dead leaves; pools of water frequently occurred right in one's beaten path, from which there was seldom any deviating. The silence was broken occasionally by the rustling of the branches, or the shrieking cry of some noisy bird. A chilly feeling crept over me, and caused me to shudder involuntarily. I found two species of orchids on the trunks of trees. I did not see any monkeys; but frequent marks of them occurred in the shape of small parcels of coffee-beans, which lay about on the stones and fallen timber. The monkeys come down to the plantations in small troops; and, filling their pouches with the coffee-cherries, run up again to the hills, where they squat on prominent places, and drop the seeds, while they eat the pulp.

A curious instance of plant-usurpation occurs on a large scale at Ceylon. A small bushy plant, with small clusters of orange flowers, called the *Lantana mixta,* was introduced into the country about eleven years ago from Brazil. It has run wild, and lines for miles the roadsides in thick hedges, occurring also up the highest hills. Wherever it goes, it seems to paralyse the plant-life. In Penang and Singapore I also noted it very frequently. In Ceylon and the two other colonies the Australian Pine (*Casuarina equisetifolia*) has also been naturalized, forming a very conspicuous and beautiful object in gardens. It is frequently covered with several species of ferns. About the wilder parts of Ceylon, near Kandy, I noted several interesting birds; among others, *Pitta brachyura, Chalcophaps indica, Palæornis calthropæ,* and *Hirundo hyperythra,* Layard. The two last are, I believe, peculiar to the Kandian district. The Red-breasted Swallows bear to *H. daürica* the same relationship that *H. catririca* of Cairo does to *H. domestica.* In habits and notes they are very similar to their ally. I also saw the *Lanius lucionensis* of Ceylon. It uttered the same chattering note as our Chinese bird.

At Colombo there is an Asiatic Society, which makes reports and corresponds with the mother institution at home and the various branch institutions abroad. I sought for its museum. One small room held library, museum, and other belongings of the Society. There were a few books, a few specimens of manufactures, a few rocks and fossils, a very few reptiles and fishes in bottles in poor condition, a few wretched mammals, and a few dozen dreadful specimens of birds. I looked through the whole of the latter, most of which were moth-eaten and tumbling to pieces. Numbers of them bore paper labels in Blyth's well-known handwriting. Among them I discovered one that interested me; it was a specimen of *Tringa albescens,* Temm., with reddish on the back and a little on the breast. It was labelled *T. minuta,* with which last species both this and the *T. damacensis* appear long to have been confounded. *T. damacensis,* Horsf. (*T. subminuta,* Midd.), we have shown to be a regular winter visitant to the east coast of India; and the discovery of this specimen proves that to Ceylon at least this little North-China bird extends its winter wanderings. I turned from this museum in disgust, and asked the peon (porter) to show me the other, or Military Medical Museum, of which he also had charge. He led me to the back of one of the chief streets, and, through a strong door, conducted me into a place which must have served the Dutch for a prison in former days. The museum was contained in two rooms, one placed at right angles to the other, in a T-form. The collection here was much finer, but sadly neglected. There was a goodly series of well-prepared skeletons, especially of mammals, a skull and part skeleton of a *Balænoptera* (Rorqual Whale), and a large entire skeleton of the Ceylonese Elephant. In this last I counted one cervical, twenty-five dorsal and lumbar, four sacral (anchylosed), and twenty-five caudal vertebræ. A skeleton of quite a young Elephant had a similar number of vertebræ. The specimens of birds were few, from various parts of the world, Australia, America, &c. Most of them were labelled "External form of ———," and too frequently wrongly named. There were, besides, some unidentified fish and snakes in bottles, with a few preparations of diseased parts of the human body; and also a small collection of shells and stones.

The general formation of Ceylon, about Kandy, appears to be limestone, with more or less quartz, the latter often speckled with pink of different shades, and sometimes with blue. Large quantities of iron-pyrites also occur. In Colombo and Galle a kind of rock, locally called *cabook*, is everywhere found. It looks like a conglomerate of clay, hardened by the percolation of water saturated with iron, full of holes, depressions, and irregularities. It occurs at no great depth below the superincumbent soft clay, and is used for building purposes at the two mentioned towns, where the Kandian limestone does not occur. At Bombay the formation appears to be trappean.

Dec. 12th. Reached Penang, and went, as is customary, to the Waterfall. The rocks here are large black boulders of granite, much as on the coast of South China, lying on reddish gravel and clay. The trees are of much the same character as at Ceylon, but more covered with ferns. In many gardens the *Casuarina equisetifolia* of Australia has attained a very large size, their trunks being overrun with *Drymoglossum* and other ferns. The cinnamon-tree has been almost entirely destroyed, as at Singapore—it is said, by a worm. I startled from the top of the waterfall a fine Sea-Eagle with white feet and tail. The Sensitive Plant grows here as a weed, as also at Ceylon and Singapore. A few Swallows (*Hirundo gutturalis*), some Swifts (*Cypselus subfurcatus*, Blyth), a Magpie-Robin or two (*Copsychus mindanensis*), with its familiar habits and notes, very similar to those of *C. saularis* and a *Chalcophaps indica*, were all the birds I observed in this trip. By the way, in speaking of *Copsychus*, it is well to note here, that both Gould (Birds of Asia) and

Jerdon (Birds of India) set down the South-China species as *C. mindanensis*, whereas Blyth and I have repeatedly shown that it is the true *C. saularis* *. We passed many gardens where the betel-leaf plant was trained on poles, like hops, for the sake of its leaf. Areca-palms were abundant, as also cocoa-nuts and the red-fruited King Cocoa-nut.

We moved out of Penang harbour at night. The sky was cloudless, with a very young crescent moon. It was warm, and the dark water wonderfully phosphorescent. The fish, as they darted about, gleamed like meteors; and as they leapt and fell again into the element, the drops were showered round like sparks, succeeded by expanding rings of silver light.

Dec. 14th, Singapore. Visited the Botanical Gardens—quite a charming spot; in fact, an English garden, with roses and other flowers placed by enchantment, as it were, on the outskirts of a primitive forest. A small party of *Budytes melanotis* were feeding on the grass-plot. They were in winter plumage, yet their dark ears at once identified them. The island of Singapore is only moderately undulated, the chief rock being granite-boulders; but near the side-harbour I observed an outcropping mass of finely laminated sandstone.

On our way up the China Sea we took what is called the Palawan passage, to escape the strength of the north-east or winter monsoon. We sighted the coast of the north end of Borneo. Dec. 17th, a *Hiaticula cantiana* flew about the ship. Several large white-bellied Gannets (*Sula*) floated past on a log. One continued till late, flying about the ship. A shoal of fish observed jumping ahead of the vessel, with a large flight of big Terns (*Sterna caspia*?) hovering over them. Sea calm, smooth, and lead-coloured, with a heavy swell. Flying-fish numerous. Dec. 19th, a Noddy (*Anoüs stolidus*) perched on the ship at night, and was caught. The Noddy was a male; irides rich brown; the bronchi were long, and broader than the trachea, but of simple form; the œsophagus expands before reaching the proventriculus, which was 1¼ in. long, and ended in a small heart-shaped stomach about ¾ in. long. The stomach contained remains of the soft part of Crustacea. The cæca were about 1½ in. long, terminating in long blank sacs, and given off about ¾ in. from anus. Testes small and black.

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* The female of the Ceylonese *Copsychus* differs as much from the male as ours. Upon what differences then, is the *C. brevirostris* separated as a distinct species? Gould and Layard, I find, both very properly unite it to *C. saularis*.

Dec. 22nd. Stood across from Luzon for China. Within sight of Cape Boleno two birds, about the size of White Pigeons, which they somewhat resembled, came near us. They were heavy-looking, with short tails and heavy bill and head. Entire plumage white. Could they have been *Gygis candida* of Australia ?

In the Hongkong bird-shops I saw in cages the *Garrulax chinesis*, Scop. (*Corvus auritus*; see Blyth's Catalogue, p. 95). This bird I have omitted from my list of China birds published in the 'Proceedings of the Zoological Society.' I have never met with it wild, and I therefore fancy its range is south of Canton. It is a much larger bird than our large *G. perspicillatus*.

At Amoy I found a female *Fringilla montifringilla* in a cage. A friend of mine had caught it in December, fluttering against a window in his house. This is the most southerly appearance of this bird on the China coast.

Between Amoy and Foochow I saw several Albatroses (*Diomedea brachyura* of Temm.) in January. Pallas mentions this bird as visiting Kamtschatka (see Zoograph. Ross.-Asiat. ii. p. 308), under the name of *Diomedea albatros*, which name should consequently take priority over *D. brachyura* of Temminck.

On 31st January I reached Tamsuy, Formosa.

Yours &c.,

Robert Swinhoe.

Formosa, April 4th, 1864.

Sir,—I have received from my friends Messrs. Caine and Cooper, of the British Consulate at Swatow, a very interesting new form of *Hypsipetes*, which I think it my duty to at once describe through your friendly columns. The bird was shot by Count Caine near Swatow, on the northern borders of the Kwangtung Province, just south of the Fokien Province, in which latter Amoy and Foochow are situated. It was skinned and forwarded to me by Mr. Cooper.

Hypsipetes niveiceps, sp. nov. Æneo-niger: capite usque ad pectus cum scapularium abdominalium subcaudaliumque marginibus niveis: alis caudaque saturate fuscis: rostro corallino: pedibus rubro-aurantiacis. Long. 9·7 poll., alæ 4·7, caudæ 4, tarsi 7, rostri 9, rostr. ad rictum 1·25.

Rictal bristles white; 1st quill short; 4th ·1 in. longer than 3rd, slightly longer than 5th, and longest in the wing. Tail of twelve feathers, inclining outwardly, and giving to that organ, when expanded, a triangular form; the rectrices with mucronate tips.

This is the first species of the black *Hypsipetes* group, with red bill and legs, procured in China. To this form, but more nearly allied to the Indian races, belongs our Formosan *H. nigerrimus*, Gould. From this last the Swatow bird, besides in having a white head, differs in some remarkable particulars. It is larger, and has a smaller bill, more suddenly dilated at the base, and with the gonys ascending towards the rictus, giving a somewhat Sturnine appearance to that organ. The feathers of the back are more regularly defined, and reflect a bluer bronze. The wings are unicolour, hair-brown. The legs have shorter tarsi and toes; and the claws are orange, instead of black. The wing is of nearly similar form, the same feather being the longest; but the 3rd and 4th are more nearly of a length than in *H. nigerrimus*. The tail is more expanded.

If this species turn out to be the sole representative of the black *Hypsipetes* form in South China, it will introduce a new topic of inquiry as to why the Formosan type should approach so near to the Indian races, while in the intermediate locality of South China the group is represented by so divergent a species.

I also, at the same time, received from Swatow a male Kestrel, only sparsely spotted with black on the mantle. Of this I had before procured an example from Amoy, which Mr. Gurney now has, and which, I believe, that gentleman considers only a casual variety of the largely and deeply spotted Japanese race (*Tinnunculus japonicus*), which is the prevailing species at Amoy. I strongly suspect, however, that the sparsely spotted form will eventually prove to be a straggler from some area in South China, where it will be found to predominate. In such case, as a permanent race it will be entitled to a distinguishing specific name. Yours &c., ROBERT SWINHOE.

Tamsuy, Formosa, April 30th, 1864.

About the middle of the month, four Partridges were brought to me from the interior mountains, alive, consisting of three males and one female. They uttered a chuckle very like that of the Guinea-hen (*Numida*). I tried my best to induce them to live; but they knocked themselves about, and one after the other succumbed. Besides their peculiar red unspurred legs, thick black bill, and very short tail, the most striking peculiarity was in their all having an ugly raw-looking red patch on the throat. I thought it curious that *all* the birds should be so injured, if the peculiarity arose from an injury; but, on examining them closely, I found that the bare throat was natural. I have been puzzling myself as to what genus to assign them, but I know of no group of Partridges to which they can be well referred. They are not *Arboricolæ*, for they are of a different type, and, from their straight claws, certainly non-perching birds. They approach nearest the genus *Caccabis*; but from these they differ in the unspurred leg, the short tail, and the thick bill. Therefore, though loth to multiply genera, I see no hope of avoiding it in this case; and, from their being denizens of the interior mountains, I propose to create for them the genus which I will proceed to define.

OREOPERDIX, n. gen. Bill thick and heavy, tending to that of *Numida*; nostrils covered in most part by a bulging opercular skin. Legs large; tarse longer than middle toe; claws long, straightish, and blunt; outer toe longer than inner, both attached by a membrane to the middle toe as far as second joint, and extending in a narrow fringe up greater part of the toe; hind toe on a level with the rest, and attached to the inner toe by a basal web. Wing concave, of moderate length; 4th and 5th remiges longest. Tail soft and very short, of 14 rectrices. Throat in typical species inflamed (in spring) and much denuded. Sexes of similar plumage; but female much smaller, with thinner and lighter bill and legs.

Oreoperdix crudigularis, n. sp.

Line round the eyes, above the ear-coverts, extending broader across throat, black. Black feathers on throat few and scattered, exhibiting a raw-looking red patch. This appears to be the work of the inflamed and expanded state of the numerous small arteries under the skin, and not due to pigment-colouring; and the feathers on that account lose their hold and fall away, as it is not of equal extent in all the individuals. This inflamed state of the throat has probably some connexion with the excited nature of the bird at the spring or breeding-season; and it is not unlikely that in winter the redness does not exist and the feathers do not fall off. Before the eyes, chin, and cheeks, under-neck and fringing the black line to over the eye, belly, and sides yellowish white, the yellowish fringe and the black neck-line having most of the feathers tipped with black. Forehead, breast, and under parts smoke-grey, tinged with olive, streaked centrally on the flanks and lower breast, and margined on the vent and parts of the axillaries with yellowish white. Occiput and back of nape reddish brown, tipped with black. Upper parts brownish olive, with several roundish bars on each feather of black, spotted and mottled as well with the same on the wing-coverts and scapularies, which are also splashed with reddish brown. Quills deep brown, margined with mottled reddish brown. Tail same as back, but the black bars somewhat irregular. Bill black. Irides olive-brown; bare skin round eye purplish flesh-colour. Inside of mouth flesh-colour. Legs light red; under-tarse, soles, and claws dingier.

♂. Length 11 in.; wing 5·6 in., rounded fourth quill slightly longer than fifth, and longest. Tail soft, 2·4 in. long, of fourteen feathers, bulging, and somewhat graduated, giving a rounded form to the tail when expanded. Tarse 1·8 in.; mid-toe 1·5 in.; its claw 6 in. Bill, along culmen, ·85 in.; from gape 1·1 in.; depth at base ·4 in.

♀. Similar in colouring to the male, but smaller, with slighter legs, feet, and bill. Length 8·5 in.; wing 5·2 in.; tail 2 in. Tarse 1·5 in.; mid-toe 1·3 in.; its claw 4 in. Bill, along culmen, ·85 in.; from gape 1·1 in.; depth at base ·3 in.

The only two other birds procured, of special interest, are a Waxwing (*Ampelis phœnicoptera*) and a *Ninox japonicus.* The former new to the Formosan fauna, and, I presume, only an accidental visitor; the latter only observed before, and not procured. Yours &c., ROBERT SWINHOE.

Tamsuy, Formosa, June 2nd, 1864.

SIR,—I have before observed that the Black Crow (*Corvus sinensis,* Gould) in the south of China is *locally* distributed. At Swatow it is common; at Amoy it gives place to the white-ringed *C. pectoralis,* Gould; and at Foochow it is scarce, but still holds its ground with the White-neck. At Peking it is *the* Crow, *C. pectoralis* being there a somewhat rare bird. In Formosa the Black Crow is *extremely* wild, and restricted to the hills. About the plains of Taiwanfoo I never saw it, nor does it occur in the immediate neighbourhood of this place. Among the wooded hills further up this river it is frequently seen; and I found a pair breeding on the south shore of the river, in a well-wooded valley about seven miles distant from here. I only succeeded in securing a nearly fledged young bird. But on a recent visit to Sawo Harbour, on the east side, I was pleased to fall in with two pairs, and succeeded in securing a male, and, from its appearance, I think there is good reason to consider it a peculiar species. The noisy and singular cries of this bird are very similar to those of the Chinese species. I have before commented on the superstitious reverence for this bird shown by the Chinese colonists, and the fruitless attempts I have made to urge them to bring me specimens. I therefore propose to specify it as the

CORVUS COLONORUM, n. sp. ♂. Length 34·5 in. Wing 14·3 in.; first quill 3·7 in. shorter than second, which is 1·3 in. shorter than third, which is nearly equal to fifth, and about ·25 in. shorter than fourth—the longest in the wing; the primaries all narrow towards their tips. Tail 9·3 in., nearly equally graduated, the outer feather being 1·2 in. shorter than the longest; all the rectrices obtusely ended, their shafts being curved inwardly. Bill along culmen 2·6 in.; greatest depth 1 in. Tarse 1·3 in.

Irides deep hazel-brown. The feathers of the throat are rounded, and not lanceolate as in *C. sinensis*. Occiput and hind-neck greyish black, tinged with olive. Lower parts obscurely shot with green; upper parts with green and purple, the latter colour chiefly on the wings.

Another novelty of much interest is a new *Pitta*, of which I received a specimen from the Formosan Mountains on the 16th May. It is allied to *Pitta cyanoptera* and *P. nympha*. From the former it can at once be distinguished by its reddish crown and light under parts, and from the latter by the colour of its crown and the want of the black chin. It may be described as follows:—

PITTA OREAS, n. sp. Crown dull reddish brown; eye-streak full and long, yellow-ochre; median coronal streak, and stripe from base of bill, under ear-coverts to back of neck, and entire hind-neck black. Back and scapulars green, as in *P. brachyura*; shoulder-spot and upper tail-coverts fine verditer blue; wing-coverts and tertiary quills green, more or less bluish, with more or less black on their inner webs; quills and tail black, a white spot on the former occupying portions of the first seven quills; the tenth quill slightly edged at the tip with bluish, the rest towards the tertiaries broadly edged on a good part of the outer web with bluish green. Throat and under-neck white, with a tinge of ochre. Under parts pale ochreous, washed with green on the flanks; centre of belly, from breast downwards, and whole of under tail-coverts fine carmine. Axillaries black; under shoulder-edge greenish blue. Bill black; legs and claws light flesh-colour.

Length 8 inches; wing 5 in.; tail 1·8 in. Bill, along culmen, 1 in.; to gape 1·2 in.; depth at base ·35 in. Tarse 1·6 in.

Yours &c., ROBERT SWINHOE.

Mr. J. H. Gurney sends us the following extract of a letter from Mr. Swinhoe, dated Formosa, 8th March, 1864:—

"I have succeeded in procuring another fine specimen of the Owl described in the 'Ibis,' 1864, p. 218, under the name of

Bubo caligatus, in which I can detect no horns; but I find that the feathers of the hind-neck are long and loose, some of those on one side especially so, and I consequently imagine that in the bird described in the 'Ibis' the native stuffer must have pushed the skin up over the ears, so as to give to the specimen the appearance of horns. . . . . . The species may yet prove to be *Syrnium indranee.* I subjoin a note on the individual last procured.

"*Syrnium caligatum,* ♀, 21st February, 1864. Bill pale yellowish white, tinged with blue (the blue tint being evanescent), deepening into indigo near its base; claws deep brown on rather more than the apical half, passing into dingy white towards their bases. Length 20 in.; tail $10\frac{1}{2}$ in., of twelve feathers somewhat graduated; wing $15\frac{3}{4}$ in., the fifth quill rather the longest.

"I received from the interior, at the same date, a specimen, new to the Formosan avifauna, of *Buteo poliogenys,* Schlegel. Bill blue-black, pale on the gonys and lower portion of base of upper mandible; cere and over the eye dull olive-green; eyelids and commissure-angle gamboge; legs and toes of a deep rich chrome-yellow; claws black, more or less patched with pale brown, chiefly about their middle portions; upper portion of the tibia feathered. Total length $16\frac{1}{2}$ in.; tail 9 in., of twelve even feathers, obtuse at the ends, and somewhat graduated outwardly, so as to give the tail a rounded appearance when expanded; wing $9\frac{1}{4}$ in., the fourth and fifth quills equal and longest. Tomiæ of bill with a single deep festoon on each side.

"Appearance of bird, between Buzzard and Sparrow-Hawk; so that Hodgson's generic name *Butastur* is very aptly applied to it. Some feathers of the hind head long and subacuminate, forming a crest protruding about half an inch."

We regret to find some errors in the article on the Nesting of the Lanner Falcon in Egypt, in the last Number of the 'Ibis.'

The Egyptian and North-African Falcon, which is identical with *Falco feldeggii,* is not *Falco sacer,* but *Falco lanarius,* Schlegel.

Falco tanypterus, Licht., from Abyssinia, as we are informed by Mr. Gurney, differs in no degree in size from *Falco lanarius,* Schlegel, but only in the deeper and richer tints of its plumage.

The egg figured in Pl. IV. fig. 2. is supposed by Mr. Cochrane to belong probably to *Falco barbarus,* and not to *Falco lanarius.*

At the same time Dr. A. Leith Adams wishes us to notice that, in his paper on the Birds of Egypt (*anteà,* p. 22), he has in two places, under the head of *Corvus cornix,* misnamed the bird, and substituted Carrion Crow for Hooded Crow.

Dr. G. Hartlaub kindly sends us the following note of Th. v. Heuglin on his newly discovered Stork, *Ciconia pruyssenaëri*:—

"This bird is nearly allied in colouring to *Ciconia leucocephala,* but differs in its darkly coloured sinciput, in the more greenish-black hue of its plumage, and especially in the extraordinary form of its tail. *All* the rectrices are greenish black, and narrower towards their points; the furcation of the tail is very deep, and the under tail-coverts pass much beyond it. The strong straight beak and the tarsi are proportionally shorter than in *C. leucocephala,* the apex of the former being *very little* bent upwards; part of the head and neck (the basal part excepted) is thickly covered with a soft white lanugo and a violet-blue skin; about the ears nearly naked. Upper head brownish black, with some greenish metallic gloss; the tips of the feathers with whitish spots. Under parts of the body, from the base of the neck downwards, greenish black; scapulars and the broad long pectoral feathers with a beautiful purple gloss; under tail-coverts, crissum, and medial abdomen white; tibiæ externally blackish, internally whitish; beak of a dirty red, and blackish at the base; feet of a paler red; iris light brown; eyelids of a light violet.

"The Stork is not very rare in the dried-up marshes of the Regnegroes, from January to May, being mostly found in company with *Grus pavonina.*"

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Jones's Naturalist in Bermuda, 1859, 104.

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Morelet's Natural History of the Azores, 1861, 400.
Morris's British Birds, 1862, 378.
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Reichenbach's Handbuch der speciellen Ornithologie, 1861, 405.

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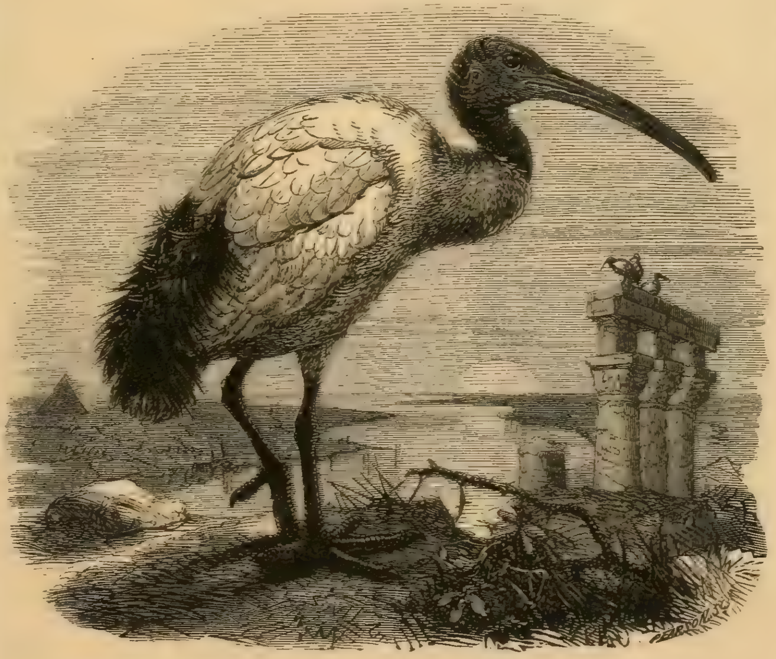

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